The Warhorse in England Under Edward I and Edward II: 1272-1327

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Intellectual Property and Publication Statements

I confirm that the work submitted is my own, except where work which has formed part of jointly authored publications has been included. My contribution and the other authors to this work has been explicitly indicated below. I confirm that appropriate credit has been given within the thesis where reference has been made to the work of others.

Part of the section 'Horse Armour' in Chapter Six of this thesis is based on a work from a jointly authored publication: David Jones and Emma Herbert-Davies, 'Evaluation of Mail Horse-Armour', *EXARC* (2022), 1-9. The work within this publication which is directly attributable to me is as follows: calculations of the size and carrying capacity of warhorses and the amount of mail needed to cover them; a consideration of the effects of thermal overload and arrow strikes on horse performance and health. The contributions of David Jones are as follows: the archaeological and historical background of mail, longbows, and arrows; construction of mail test pieces and targets; conducting the physical tests; analysis of the depth of penetration of the mail by arrowheads.

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Acknowledgments

I also would like to acknowledge the many inspirational people I have met on my academic journey. Firstly, to Dr Madeleine Newman and Dr Zoe Enstone of the Lifelong Learning Centre who opened my eyes to the possibilities of academic research in medieval studies and instilled in me the confidence to believe in myself. To the wider community of equine researchers, particularly Anastasija Ropa whose dedication to providing online conferences during the coronavirus pandemic helped to keep me engaged with the topic of horses in history. To David Jones, who invited me to contribute to his experiments with mail horse armour, and whose expertise on longbows was inspirational. I would also like to thank Dr Johnathan Jarrett, who introduced me to the fascinating world of numismatics during my Laidlaw scholarship and acted as my postgraduate advisor.

Abstract

This thesis looks at the warhorses used on the campaigns of Edward I and Edward II (1272-1327). Its purpose is to gain an understanding of the types of horses ridden on campaign, their origin and training, and to consider the impact of warfare on their health and welfare. This is achieved by analysing a corpus of mostly unpublished primary sources including army inventories and royal stable accounts, and by drawing from the intellectual framework on horse care presented in contemporary hippiatric texts. This thesis contributes to both Military History and Animal Studies. It places horses within the wider context of armed conflict and argues that that during these periods the production and management of warhorses was an important component of English warfare.

Chapter One provides an overview of the benefits and limitations of the primary source material used to analyse the warhorses of the period. Chapter Two investigates the horses used by men-at-arms on campaign and discusses their types and physical characteristics. Chapters Three and Four focus on where warhorses came from: Chapter Three analyses the import of warhorses from overseas and the English horse market; Chapter Four explores how royal studs focused on the breeding of warhorses. Chapter Five considers how warhorses were trained and prepared for combat. Chapter Six investigates how warhorses were looked after on campaign and considers the impact of warfare on their numbers and welfare.

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Abbreviations

Albertus Magnus	Albertus Magnus, *De Animalibus Libri XXVI, Nach der Cölner Urschrift*, trans. by Herman Stadler, 1916 (Münster: Aschendorff, 1916)
Bain	*Calendar of Documents Relating to Scotland,* ed. by Joseph S. A. Bain, 4 vols (London: Public Record Office, 1881-1888)
BAV	Biblioteca Apostolica Vaticana, Vatican City
BNF	Bibliothèque nationale de France, Paris
BL	British Library, London
Byerly	*Records of the Wardrobe and Household,* ed. by Benjamin F. Byerly and Catherine Ridder Byerly, 2 vols (London: HMSO, 1977-1986)
CCR	*Calendar of Close Rolls*
CPR	*Calendar of Patent Rolls*
Gascon Rolls	*Gascon Rolls 1307-1317,* ed. by Yves Renouard and Robert Fawtier (London: HMSO, 1962)
Gough	*Scotland in 1298: documents relating to the campaign of Edward I in that year,* ed. by H. Gough (London: Alexander Gardner, 1888)
Isidore of Seville	Isidore of Seville, *The Etymologies of Isidore of Seville,* trans. by Stephen A. Barney (Cambridge: Cambridge University Press, 2006)
Jordanus Rufus	Jordanus Rufus, *Jordani Ruffi Calabriensis Hippiatrica*, ed. by Hieronymus Molin (Padua: Seminarii Patavini, 1818)
Laurentius Rusius	Laurentius Rusius*, La mascalcia di Lorenzo Rusio volgarizzamento del secolo XIV,* ed. by Pietro Delprato and Luigi Barbieri (Bologna: Presso G. Romagnoli, 1867)
Parl. Writs	*The Parliamentary Writs and Writs of Military Summons*, ed. by Francis Palgrave 4 vols (London: G. Eyre and A. Strahan, 1827-1834)

Practica equorum   BL, Additional MS 35179, fols 20^v-30^v

TNA   The National Archives, Kew, Richmond, Surrey

Topham   *Liber Quotidianus Contrarotulatoris Garderobiae, 1299-1300*, ed. by J. Topham et al. (London: J. Nichols, 1787)

Trokelow   John Trokelow, *Johannis de Trokelowe annales Edvardi ii. Henrici de Blaneforde chronica, et Edvardi ii vita*, ed by Henry de Blanforde ([n.pub.]: Oxford,1729)

Notes

The names of people from England, Scotland, and Wales are referred to by their forms in the *Oxford Dictionary of National Biography* (for example, Walter de Bello Campo is presented as Walter Beauchamp). Where place names are used as last names the place name is used (so William de Tholosa as William Toulouse) but in cases where the meaning is obscure or when the names do not feature in the *Dictionary* the original format of the surname and spelling is retained. Where names have multiple spellings, the most common version is used. Where the personal names of horses are given these are presented in their original Latin format (for example, Morel de Kenyton). References to horse types in manuscripts are translated into English except for the type termed an *equus* (which translates as horse). This is to avoid confusion with the generic English word 'horse' (so destrier and rouncey, but *equus*).

Latin abbreviations are expanded within [brackets] unless the word endings are uncertain, in which case they are reproduced as found in the manuscripts. For consistency and clarity all marks are converted into pounds at the rate of one mark to two-thirds of a pound. All translations are my own unless otherwise stated. I occasionally add silent punctuation to passages quoted from manuscripts and printed primary sources.

Where the specific rank of an individual is discussed, the Latin terms *miles* and *valletus* are translated as knight and sergeant. To best represent the ambiguity of medieval terminology, the term 'man-at-arms' is used as a generic reference to mounted retine leaders, knights, and sergeants serving in the king's retinues.

Introduction

The horse was a ubiquitous presence in medieval armies, being used to mobilise troops, carry soldiers into battle, and transport supplies. Yet compared to the wealth of historical research carried out on topics such as the composition of armies, military tactics, and weapons, little attention has been paid to the horses that were ridden into battle. To date, much of the research on warhorses has been carried out from an anthropocentric perspective: horses are either considered in terms of their cultural value as symbols of chivalric status, as economic units reflective of military rank, or as a homogenous mass of horseflesh employed in cavalry formations to win battles. There has yet to be a comprehensive study in which the horses themselves are the focus.

Extensive efforts were made to ensure that men-at-arms were properly mounted for battle. The reliance placed by fighting members of the nobility on their horses cannot be understated – their horses had to have the right build, temperaments, and training to safely carry them into battle.[1] No man-at-arms would willingly take to war a horse that had not been specifically produced for the purpose. Not only would an unsuitable mount compromise his fighting ability, it could also be the potential cause of his death. The production and supply of horses suitable for warfare was therefore key to the ability of the European armies to field an effective force of cavalry.

The marginalisation of warhorses has been to the detriment of military and animal studies. It has obscured the importance of warhorses and impaired our

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[1] R. H. C. Davis, *The Medieval Warhorse: Origin, Development and Redevelopment* (London: Thames and Hudson, 1989), p. 11.

understanding of their impact on the political and social milieu. We cannot properly

understand how armies functioned without considering the influence of warhorses on

their infrastructure, or without considering the efforts made to ensure horses were

suitable for campaigns. Nor can we assess the broader influence of warhorses in

society without first establishing where they came from and how they were produced

for the battlefield. These topics offer the opportunity to investigate the relationship

between warhorses and commercial networks, and to explore attitudes towards their

care and training.

The fundamental aim of this work is therefore to bring to attention the

importance of warhorses in England. To do this, four important questions will be

asked: what type of horses were they; where did they come from; how were they

trained for warfare and lastly, how were they managed on campaign and what effect

did warfare have on them? These questions will be addressed by focusing on

warhorses under Edward I (1272-1307) and Edward II (1307-1327). This period is

particularly suited to such a study as it represents a time in which warhorses

'occupied a place of primary importance' in military operations.[2] This was due to an

almost continuous series of conflicts in which mounted forces were employed on an

'unprecedented scale'.[3] Although Henry III (1216-1272) had campaigned in Wales in

1245, and in Gascony in the 1240s and 1250s, and had employed cavalry against

his baronial rebels (at the Battle of Lewes in 1264 and the Battle of Evesham the

following year), there is little evidence of warhorses being employed on the same

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[2] Andrew Ayton, *Knights and Warhorses: Military Service and the English Aristocracy Under Edward III* (Woodbridge: Boydell Press, 1999), p. 22.
[3] Michael Prestwich, *War, Politics and Finance Under Edward I* (Totowa: Rowman and Littlefield, 1972), p. 47; David Stewart Bachrach, Daniel Bachrach, and Lu Zuo, 'Warhorse Markets and Social Status of Combatants under Edward I of England, 1296–1307', *The Haskins Society Journal*, 32 (2020), 227-47 (p. 233).

scale.[4] Edward I and Edward II's reigns offer the opportunity to examine warhorses at a time when demand for the type of horses used as heavy cavalry (defined as being used primarily to deliver battlefield charges) was at its peak.[5] The conflicts were mostly within the British Isles: Edward I's rule was marked by wars in Wales in 1277 and 1282; expeditions to France and Flanders in 1294 and 1297; then a series of wars with Scotland between 1296 and 1307.[6] Hostilities with Scotland continued under Edward II, culminating in a disastrous defeat at the Battle of Bannockburn in 1314, and it was not until 1328 that a formal peace treaty was agreed.[7] Under Edward III a shift in military tactics away from the use of heavy cavalry towards a greater reliance on archers and *chevauchée*-type operations meant that after the first quarter of the fourteenth century warhorses played a much reduced role in English warfare.[8] The reigns of Edward I and Edward II can therefore be arguably described as an apex in the history of warhorses and therefore a time in which they were of particular importance.

During the Middle Ages many different types of horses were used on military expeditions but the one that we most commonly associate with the term 'warhorse' - and the one that forms the main subject of this work - is the mount that bore the aristocratic warrior onto the battlefield. The iconic image of the knight charging into

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[4] For warhorses purchased by Henry III see pp. 86-87. For works on Henry III see D. A. Carpenter, *The Reign of Henry III* (London: Hambledon, 1996); Robert C. Stacey, *Politics, Policy and Finance Under Henry III* (Oxford: Clarendon Press, 1987), esp. pp. 160-200 (Gascon campaigns) and pp. 245-47 (Wales).

[5] Ayton, p. 25.

[6] Michael Powicke, 'The General Obligation in Cavalry Service Under Edward I', *Speculum,* 28 (1953), 814-833 (p. 817). For the campaigns of Edward I see J. E. Morris, *The Welsh Wars of Edward I* (Oxford: Clarendon Press, 1901: repr. Cambridge, MA; De Capo Press, 1996); Michael Prestwich, *Edward I* (New Haven: Yale University Press, 1997), pp. 170-202; 360-400; 469-516.

[7] For the campaigns of Edward II see *The War of Saint-Sardos, 1323-1325*, ed. by P. Chaplais (London: Royal Historical Society, 1954).

[8] Ayton, p. 22.

battle on a magnificent steed is perhaps the most potent symbol of medieval warfare,

In literary works the hero is also invariably associated with a warhorse, and perhaps

the most famous partnership can be found in Alexandre de Paris's *Roman*

d'Alexandre. In this tale Alexander the Great is the only man capable of taming the

wild horse Bucephalus and once mounted, Alexander is able to go on and make his

conquests. When Bucephalus finally dies in battle, Alexander is grief-stricken. The

horse is buried in an elaborate tomb and over it, Alexander builds a city and names it

after his horse.[9] The association of knightly status and warhorse was reiterated in

chivalric works: in *The Book of the Order of Chivalry* composed by the Catalan

polymath Ramon Lull (1232-1316) it was clearly stated that 'a knight who has no

horse is not suited to the office'.[10] This was not simply a romanticised ideology but

one based on reality - the ownership of a warhorse was a 'prerequisite of service' for

a knight whose fundamental obligation was to take up arms.[11]

How much do we know about the horses ridden by aristocratic fighting men?

Much of the research carried out on the warhorse has focused on its allegorical

significance or how it can be used to reinforce the social and military identity of its

rider.[12] From a cultural perspective the warhorse is viewed as a symbol of chivalric

status: Jeffrey Cohen described it as an 'identity machine […] the knight's beloved

companion and the *sine qua non* of chivalric identity'.[13] Susan Crane expanded on

this in her study of how cross-species relationships were portrayed in written texts. In

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[9] Alexandre de Paris, *Le Roman d'Alexandre*, trans. by Laurence Harf-Lancner (Paris: Librairie générale française, 1994), II, 461-83.

[10] Ramon Llull, *The Book of the Order of Chivalry*, trans. by Noel Fallows (Woodbridge: Boydell Press, 2013), p. 56.

[11] Ayton, p. 21.

[12] Marina Viallon, 'Knights and Destriers: Representations and Symbolism of the Medieval Warhorse in Medieval Art', *Medium Aevum Quotidianum: Newsletter*, 69 (2014), 25–30.

[13] Jeffrey Jerome Cohen, *Medieval Identity Machines* (Minneapolis: University of Minnesota Press, 2003), p. 49.

her analysis of the mounted knight she drew attention to how the combination of

knight, arms, horse, and equestrian equipment functioned as a 'combat mechanism'

to emphasise the rider's physical and moral qualities.[14] Such perspectives offer

much in the way of our understanding of how the warhorse was used in art and

literature to shape the identity of the elite fighting class, but it reveals little about the

horse itself.

Military historians have conducted studies on the warhorse from an economic

point of view. Andrew Ayton analysed warhorse values through a study of the horse

inventories, a corpus of documents created to record the details of paid men-at-arms

in Edwardian armies (1272-1377) alongside descriptions and values of their

mounts.[15] He was able to show that military officials separated warhorses into three

separate types and that an analysis of the values of each type offered much

information on the social identities of the chivalric community in England. Ayton's

work inspired authors such as David Simpkin, Nicholas Gribit, and David and Daniel

Bachrach to utilise the inventories for similar purposes.[16] Such studies provide useful

information on the nomenclature used to describe the different types of horses taken

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[14] Susan Crane, *Animal Encounters: Contacts and Concepts in Medieval Britian* (Philadelphia: University of Pennsylvania Press, 2013), p. 167. Also see Anastasija Ropa, *Practical Horsemanship in Medieval Arthurian Romance* (Budapest: Trivent. 2009); *The Horse as a Cultural Icon: The Real and the Symbolic Horse in the Early Modern World*, ed. by Peter Edwards, Karl A. E. Enenkel and Elspeth Graham (Leiden: Brill, 2012); Richard Marks, 'Sir Geoffrey Lutrell and some companions', in *Studies in the Art and Imagery of the Middle Ages*, ed. by Richard Marks (London: Pindar Press, 2012), pp. 657-81; Katrin Boniface, 'Horsepower: Social Revolution in Medieval Europe*'* (unpublished Master's dissertation, California State University 2015); Karen Campbell, 'Reading Horses and Writing Chivalry', in *The Horse in Premodern Culture*, ed. by Anastasija Ropa and Timothy Dawson (Berlin: De Gruyter, 2019), pp. 107-21.
[15] See Ayton.
[16] David Simpkin, *The English Aristocracy at War from the Welsh Wars of Edward I to the Battle of Bannockburn* (Woodbridge: Boydell, 2008), esp. pp. 58-61; Nicholas A. Gribit, *Henry of Lancaster's Expedition to Aquitaine, 1345-46* (Woodbridge: Boydell, 2016); Bachrach, Bachrach, and Zuo. For a work that is partly based on Ayton's study of warhorse prices see Anastasija Ropa, 'The Price and Value of the Warhorse in Late Medieval England', in *The Horse in Premodern Culture*, ed. by Anastasija Ropa and Timothy Dawson (Berlin: De Gruyter, 2019), pp. 219-33.

on campaign but do not answer the question of how and why officials distinguished one type of horse from another. Further analysis of the inventories could form the basis of an investigation into what kind of horses qualified as suitable for warfare and what they may have looked like. Ayton highlighted the usefulness of these records, but they have yet to be used as a documentary source for a study on warhorses. This is largely due to the nature of the material: most of the inventories are unpublished and survive only in Latin manuscripts.[17]

This is not to imply that there have been no studies in which the warhorse has been the primary focus of research. The emergence of Animal Studies in the 1980s generated some historical interest in the warhorse, namely through the pioneering works of R. H. C. Davis, Charles Gladitz, and Ann Hyland.[18] Davis's work can be considered groundbreaking for its time but is in need of review: his statement that warhorses had to be as large as modern Shire horses (*c.* 178 cm) to carry the weight of an armoured knight was not supported by any evidence.[19] A study on medieval horse breeding by Charles Gladitz was produced around the same time. Gladitz

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[17] To date, the only work using the inventories (see pp. 260-62) to study the horses themselves has been carried out by myself: Emma Herbert-Davies, *'Appraising the Warhorse: Restaurum Equorum in the Reigns of Edward I and II', in Historical Practices in Horsemanship and Equestrian Sports*, ed. by Anastasija Ropa and Timothy Dawson (Budapest: Trivent, 2022), pp. 141-58. This paper represents my initial investigations of the inventories to discover more about how horses were assessed for campaigns. This has been used to form the basis of the subsection 'The Appraisal Process' in Chapter Six of this thesis.

[18] For an overview of medieval animal studies see Anna Lisa Taylor, 'Where Are the Wild Things? Animals in Western Medieval European History', *History Compass*, 16 (2018), 1–12.

[19] Davis, p. 69. To clarify: horses are measured to their withers which are located at the top of their shoulders between the neck and the back. Ponies are said to be 147 cm or under, and anything bigger is usually referred to as a horse. Davis's assumption did not go unchallenged at the time: Bernard Bachrach studied the warhorses in the Bayeux Tapestry and concluded that they were around 163 cm: Bernard S. Bachrach, 'Caballus et Caballarius in Medieval Warfare', in *The Study of Chivalry: Resources and Approaches,* ed. by Howell Chickering and Thomas H. Seiler (Medieval Institute Publications: Michigan, 1988), pp. 173-212. Matthew Bennett suggested that warhorses were even smaller - around 153 cm: Matthew Bennett, 'The Medieval Warhorse Reconsidered', in *Medieval Knighthood, Papers from the Sixth Strawberry Hill Conference 1994*, ed. by Stephen D. Church and Ruth E, Harvey (Woodbridge: Boydell Press, 1995), pp. 19-40 (p. 22).

looked at horse production in the East and the West and concluded that the

development of horse types was strongly influenced by a combination of economic

and military requirements.[20] The work provides a useful overview of how horse

breeding was influenced by the demands of war, but its geographical scope means

that each topic is overly succinct and therefore lacks analysis - the part covering

English studs is limited to less than a dozen paragraphs. What is most interesting

about this section is the author's use of a handful of *equitium regis* accounts, or

records relating to the royal studs.[21] These offer the potential to learn much about

how medieval horses were bred but there has yet to be a major investigation of

these records. Like the inventories they are not available in printed form and as they

relate exclusively to equine matters, they are difficult to properly comprehend without

some prior knowledge of horse care and breeding. An analysis of their contents by a

historian who is well-versed in these subjects could greatly illuminate their contents

and answer many questions about medieval horse production.

Ann Hyland deserves mention as she was perhaps the most prolific author on

ancient and medieval horses in the 1990s and her work is still much cited.[22]

However, her monograph on warhorses in the Middle Ages was, like Gladitz's,

perhaps over-ambitious in its attempt to cover multiple geographical regions

(Europe, the East, India, and America) alongside a wide range of subject matter. This

means that most topics are restricted to a single paragraph which limits any useful

analysis. Hyland's work also needs to be treated with caution as some of her

statements are based on unsubstantiated source material: for example, her assertion

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[20] Charles Gladitz, *Horse Breeding in the Medieval World* (Dublin: Four Courts Press, 1997).
[21] For a full list of the *equitium regis* accounts used in this thesis see pp. 263-64.
[22] Ann Hyland*, Equus: The Horse in the Roman World* (London: B. T. Batsford Ltd, 1990); *The Medieval Warhorse from Byzantium to the Crusades* (Stroud: Sutton Publishing, 1994); *The Warhorse 1250-1600* (Stroud: Sutton, 1998); *The Horse in the Middle Ages* (Stroud: Sutton, 1999).

that King John imported '100 heavy stallions from Flanders' relies on a nineteenth-century source which supplied no references to support its statements.[23] Whilst valuable for helping to bring the subject of the warhorse to scholarly attention, Hyland's work is much in need of revision and a comprehensive update based on primary sources.

The subject of the warhorse has only recently generated new interest. Davis's assertion that warhorses were very large generated some new debate: Michael Prestwich investigated the amount of oats fed to warhorses and concluded that they were not as large as Davis presumed, but were still quite substantial, perhaps around the size and height of early modern cavalry horses (up to 163 cm).[24] More recently, a project was set up by a team based at the Universities of Exeter and East Anglia to discover more about warhorses in the ninth to the seventeenth centuries.[25] This study has so far focused largely on archaeological and landscape evidence, and their recent analysis of horse bones showed that most horses between 1200 and 1350 were approximately 133 cm in height – the equivalent to small modern ponies.[26] The height of warhorses remains unclear, and there is a need to revisit the subject and introduce new evidence to help form a more accurate estimation.

The subject of warhorse training has recently attracted attention from a small number of authors. Carroll Gillmor considered how a warhorse might theoretically be required to perform in battle, but due to a complete lack of extant medieval horse

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[23] Ann Hyland, *The Warhorse 1250-1600* (Stroud: Sutton, 1998), p. 13.
[24] Michael Prestwich, '"Big and Beautiful": Destriers in Edward I's Armies', in *Medieval Communities in Late Medieval England: Essays in Honour of Andrew Ayton,* ed, by Gary P. Baker, Craig L. Lambert and David Simpkin (Woodbridge: Boydell Press, 2018), pp. 1-14.
[25] Oliver Creighton, Alan Outram and Robert Liddiard, 'Warhorse: The Archaeology of a Military Revolution?', <https://medievalwarhorse.exeter.ac.uk> [accessed 4 March 2024].
[26] Carly Ameen, and others, 'In Search of the Great Horse: A Zooarchaeological Assessment of Horses from England (AD 300–1650)', *International Journal of Osteoarchaeology* (2021), 1247–1257.

training manuals she was forced to base her arguments on two distantly related texts: Arrian's *Ars Tactica* (c. 136–37 BC) and Federico Grisone's *Ordini di Cavalcare* (1550). Gillmor argued that collection - a movement that consists of a horse drawing its hind legs under its body - must have been a key factor in training the warhorse to make sharp turns in feigned retreats, a point that had been similarly addressed by Jürg Gassmann two years earlier.[27] Following Gillmor, Jennifer Jobst, Anastasija Ropa, and Sunny Harrison also considered how medieval horses were trained.[28] All these authors based their work on French and Latin manuscripts of *De Medicina Equorum*, a treatise on warhorse care and veterinary treatment written by the thirteenth-century Italian author Jordanus Rufus.[29] Jobst and Ropa surmised that there were many similarities between Jordanus's method of training and modern training techniques, and his holistic approach to horse care made him an 'early advocate of horse welfare'.[30] Harrison took an opposing view, arguing that some of Jordanus's advice for controlling unruly horses was indicative of 'a programme that

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[27] Carroll Gillmor, 'Some Observations in On the Training of Medieval Warhorses', in *Military Cultures and Martial Enterprises in the Middle Ages: Essays in Honour of Richard P. Abels*, ed. by John D. Hosler and Steven Isaac (Woodbridge: Boydell, 2020), pp. 237-56; Jürg Gassmann, 'Combat Training for Horse and Rider in the Early Middle Ages, *Acta Periodica Duellatorum*, 6 (2018), 63-98 (pp. 65-66).

[28] Jennifer Jobst, 'Horse Training in the Thirteenth Century: Insights from Jordanus Rufus', in *The Liminal Horse: Equitation and Boundaries*, ed, by Rena Maguire and Anastasija Ropa (Budapest: Trivent, 2021), pp. 13-50; Anastasija Ropa, 'Crossing Borders in Equestrian Training: Applying Jordanus Rufus's Advice on Training Young Horses Today', in *The Liminal Horse: Equitation and Boundaries*, ed. by Rena Maguire and Anastasija Ropa (Budapest: Trivent, 2021), pp. 51-89; Anastasija Ropa, 'Groundwork with Horses: Learning from Medieval and Early Modern Treatises, in *Historical Practices in Horsemanship and Equestrian Sports*, ed, by Anastasija Ropa and Timothy Dawson (Budapest: Trivent, 2022), pp. 185-208; Sunny Harrison, 'How to Make a Warhorse: Violence and Behavioural Control in Late Medieval Hippiatric Treatises', *Journal of Medieval History* (2022), 1-21, DOI: 10.1080/03044181.2022.2076725.

[29] Although a treatise dedicated to general horse care and veterinary treatment, Harrison argues that the warhorse was its theoretical focus: Sunny Harrison, 'Jordanus Rufus and the Late-Medieval Hippiatric Tradition: Animal-Care Practitioners and the Horse' (unpublished doctoral thesis, University of Leeds, 2018), p. 41. I follow Harrison in using the Latinised version of the hippiatric author's name (Jordanus Rufus, not Giordano Ruffo).

[30] Jobst, p. 45.

was steeped in violence and the imposition of human will'.[31] The difficulties in applying intellectual hippiatric frameworks to modern methodologies is perhaps best expressed by Harrison's comment that 'we lack a clear understanding of the forms and exercises used in medieval horse-breaking and training'. This understanding is impaired by a reliance on hippiatric texts as the sole source of horse training information in the Middle Ages. However, historians have failed to recognise that the *equitium regis* accounts can be mined to provide insights into the management of young horses. Such information is frequently accompanied by lists of equipment bought for training purposes, and a careful analysis of this equipment could provide practical evidence of how medieval horses were trained. Used in conjunction with the theoretical frameworks provided by authors such as Jordanus, such a study would contribute greatly to our understanding of how the warhorse was produced from birth to battle.

To date there has been no study of how warhorses were managed on campaign, or how these animals were affected by medieval warfare. When historians such as David Bachrach have considered horses within the context of English campaigns they are only mentioned in terms of the logistics of carting supplies or the construction materials needed to ship horses overseas.[32] The impact of warhorses on military administrative systems, the efforts made to care for warhorses, and the toll taken by campaigns on their numbers and health, are topics that have been much neglected. What is needed is a thorough analysis of primary sources to

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[31] Harrison, 'How to Make a Warhorse: Violence and Behavioural Control in Late Medieval Hippiatric Treatises', p. 20.

[32] David Stewart Bachrach, 'Military Logistics during the Reign of Edward I of England, 1272–1307', *War in History*, 13 (2006), 423-40; Bryce Dale Lyon, 'The Failed Flemish Campaign of Edward I in 1297: A Case Study of Efficient Logistics and Inadequate Military Planning', *Handelingen der Maatschappij voor Geschiedenis en Oudheidkunde te Gent*, 59 (2005), 31-42 (p. 80).

properly understand the importance placed on warhorses. Ayton's study of the horse inventories provided a brief overview of how the horses belonging to paid men-at-arms were valued at the start of each campaign, but this could be significantly expanded to explain how warhorses shaped military policies and administrative infrastructures. An analysis of horse attrition rates, a topic that so far has been eschewed by scholars of military history and animal studies, would also contribute much to our understanding of the performance of late medieval English armies. No study of warhorses would be complete without considering the efforts made to protect them from injuries by weapons. An assessment of the materiality and efficacy of horse armour would give valuable insights into attitudes toward horses. Although the efficacy of knightly armour and the form and format of horse armour are topics that have been separately addressed by military historians, they have yet to be combined in a study in which the horse is the focus.[33] A study that incorporates the practicalities of horse armour and the levels of protection it could theoretically provide would have wide-ranging benefits for researchers in the fields of military and animal studies.

In summary, although the subject of the warhorse has enjoyed a recent resurgence of interest there is still much work to be done if we are to gain a proper understanding and appreciation of its importance in medieval society. As an equestrian with over four decades of experience in training and riding horses, my interest in warhorses has been generated by a desire to understand how these animals were produced and managed in an era in which mounted cavalry played an

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[33] For an overview of tests carried out on the efficacy of arrows see Matthew Strickland and Robert Hardy, *The Great Warbow* (Stroud: Sutton, 2005), pp. 276-78. For a summary of medieval horse armour see Stuart W. Pyhrr and others, *The Armoured Horse in Europe 1480-1620* (New York: Metropolitan Museum of Art, 2005).

integral role in warfare. My lengthy experience with horses means that I am in the advantageous position of being able to evaluate primary source materials from an equestrian perspective. Whilst analysing any medieval source from a modern viewpoint requires great caution, a sound knowledge of horses is imperative to fully comprehending texts in which horses are the principal focus. This study is based mainly on primary documentary sources, most of which are unpublished and have yet to be properly analysed with the warhorse as the focus. Occasionally I bring into play other primary sources such as royal household accounts, letters, and various Chancery documents, as these provide useful supplementary information that helps to support the findings of this study.

Chapter One provides an overview of the three main documentary sources that form the foundation of my study of warhorses. These comprise the horse inventories, *equitium regis* accounts, and hippiatric treatises. It considers their context and format and engages with the problems of using these different types of sources by considering their possibilities and limitations. It demonstrates that the inventories offer much more than simply a list of names of men-at-arms; they supply a wealth of information on the horses taken on campaign. The *equitium regis* accounts have yet to be properly studied and this chapter reveals that they offer an abundance of detail on how warhorses were produced for the royal household. Lastly, it addresses the content of hippiatric treatises, particularly the work produced by Jordanus Rufus, and shows that they provide a useful intellectual framework on horse care and training by which we can better understand the evidence found in the first two types of sources.

Chapter Two asks what types of horses were used in war. To answer this the different types of horses used by paid men-at-arms in the armies of Edward I and

Edward II are explored. This chapter considers the possible physical differences between these types, and how and why the valuations of each type often significantly overlap. It also explains the terminology used to describe the colours of warhorses and investigates whether certain shades were dominant. These findings are compared to our current understanding of medieval horse colours. Lastly, this chapter reconsiders the common assumption that the horses used on campaigns were all entire males (stallions).

Chapters Three and Four answer the questions of where and how warhorses were obtained. Chapter Three investigates the importing of warhorses from abroad and the warhorse market in England. It explains how horse-trading networks operated and identifies the people who were involved with the buying and selling of these animals. It also considers the ramifications of political instability on these networks. Chapter Four continues the thread begun in the previous chapter by investigating the breeding of warhorses on royal studs. It considers the factors that influenced the breeding of warhorses in England and explores how breeding horses were obtained. It explains the infrastructures that were put into place to facilitate the production of royal warhorses and identifies the key figures that were involved in the operation of the studs. The chapter then explores how warhorses were bred and cared for. Questions concerning horse health and disease are also addressed, and the effects of epizootics on horse breeding are considered.

Chapter Five explores how warhorses were trained. This chapter analyses royal breeding records to discover how youngstock were selected and prepared for war. It examines the different kinds of equipment bought to train these young horses and considers how these may have been used. To do this I draw from my personal

experience of training horses and the intellectual frameworks of horse breaking outlined in hippiatric treatises.

Chapter Six asks how warhorses were cared for on campaign and how they were affected by warfare. It explores the administrative processes put in place to assess warhorses during the muster process and considers what officials were looking for when they valued the mounts belonging to paid men-at-arms. It investigates horse armour and considers its form, function, and the practicalities of protecting horses from injury. The efficacy of armour is investigated, and I draw conclusions from a collaboration with a longbow expert to evaluate padded mail and the possible implications of its use on horses. Lastly, this chapter considers the effect of warfare on horses by studying their attrition rates and the terminology used by royal administrators when horses were recorded as lost on active service.

Chapter One: The Primary Sources

The dependence on horses during the Middle Ages for travel, haulage, and warfare means that references to the purchasing and keeping of horses can be found scattered throughout a miscellany of records such as manorial accounts, estate records, wills, and royal administrative accounts. For the most part, these relate to ordinary horses such as those used for carting or everyday riding.[34] Finding evidence of warhorses is a great deal more difficult. Although they appear in a handful of wills, legal cases, and Royal Wardrobe accounts, the evidence is too fragmentary for any methodical analysis.[35] Fortunately, there are three corpora of documents that relate specifically to horses, and these can be used as the principal source materials for investigating those horses taken on campaign. The first relates to *restaurum equorum*, or warhorse insurance, and comprises two related sets of documents: the horse inventories, which are lists of paid men-at-arms and their horses, and the *restor* accounts that record the compensatory payments made when these horses were lost or killed on campaign.[36] The second corpus comprises the *equitium regis*

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[34] For example, accounts for the Archbishop of Canterbury's estates in Surrey and Middlesex offer evidence of horses used for harrowing and to pull carts: Bridgett Jones, 'The Kilwardby Survey of the Archbishop's Manors in South-East England 1273-4', *Kent Archaeological Society* (2007), 1-228, <https://www.kentarchaeology.org.uk> [accessed 30 November 2024]; for a horse named Rugemont purchased to pull the short cart belonging to the king's daughter, and for a riding horse bought for the Archbishop of Durham see Byerly, I (1977), pp. 32; 59.

[35] A warhorse was bequeathed to Bolton Priory in 1318 by Lady Neville: Ian Kershaw, *Bolton Priory: The Economy of a Northern Monastery 1286-1325* (Oxford: Oxford University Press, 1973), p. 105; in 1296 Ralf of Ireland was tried and imprisoned for wounding the charger belonging to Sir John Lovel: Bain, II (1884), p. 190; for expenses of two of the king's destriers see Byerly, I (1977), p. 53.

[36] Ayton refers to these documented payments as 'restauro equorum' accounts, but this is easily confused with the term that is used to describe the general policy of granting horse compensation ('restaurum equorum'). For this reason, the accounts that record compensation payments for horses lost by men-at-arms are referred to throughout this thesis as 'restor' accounts.

accounts, or records of the royal stables and studs. The third and final corpus

consists of hippiatric treatises, or manuals dedicated to horse care and veterinary

treatment. Each of these types of documentary sources offers plentiful evidence of

the types of horses taken into war, as well as their breeding, care, and training.

The Horse Inventories

The horse inventories consist of lists of men-at-arms alongside descriptions of their

horses' types, colours, and values.[37] They form part of the administration generated

by *restaurum equorum,* or 'compensation of horses', a benefit offered to men-at-

arms in receipt of the king's pay. This operated as an insurance policy so that if the

horses belonging to stipendiary troops were killed or incapacitated during a

campaign their owners could claim financial renumeration for their loss. The

inventories span a period of almost eighty years, with the first extant inventories

dating from the second Welsh war in 1282 and the last to the Irish campaign led by

Lionel of Antwerp, Duke of Clarence, in 1361.[38] They can be found in a variety of

formats such as rolls, single manuscripts, and sewn bundles of membranes, and

they are for the most part written in Latin. The main inventories were drawn up as

part of the muster process when troops assembled for a campaign and contain the

largest number of horses, but numerous smaller inventories were also raised

throughout expeditions, normally when smaller troops were put together for special

missions. Almost all the inventories follow a standardised format: retinues are

recorded in order of rank, commencing with the retinue leader followed by his knights

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[37] The horse inventories can be found in the Records of the Exchequer in the National Archives, Kew, within the King's Remembrancer Accounts (Accounts Various, E101) and Chancery Miscellanea (subseries C47, Bundle 2 Army and Navy).
[38] Ayton, p. 50.

and then his *valletti*, or sergeants.[39] Each entry is placed on a separate line that gives the person's name and rank followed by the type of horse he was riding, its colour and markings, and its value. These latter details provide a rich reservoir of information on the physicality and quality of the warhorses assembled at musters and ridden on the campaigns of the period.

Why was horse compensation offered to paid men-at-arms? The benefit was an acknowledgement that a warhorse represented a major investment for a man-at-arms: for a knight in receipt of £20 a year, a warhorse worth £8 - the mean value of horses taken on the Welsh campaign in 1282 - was a substantial figure that represented almost six months wages.[40] Renumeration for horses lost in the king's service was not a new custom, nor was it strictly confined to those men and horses listed in the inventories. Horse compensation had sometimes been extended to individuals as a 'matter of royal favour' before the reign of Edward I, but it appears to have only become customary to offer it to those in royal pay during the campaigns of the three Edwards (1272-1377).[41] Evidence of horse compensation agreements can also be found in private indentures like the one made between Aymer de Valence and Sir Thomas de Berkeley in 1297 which included compensation if horses were lost whilst fighting overseas.[42] However, such indentures offer little information on the

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[39] For an explanation of the terminology of military rank in Edwardian armies see Simpkin, pp. 32-39. Sometimes men who were members of the royal household but not directly attached to a retinue were listed separately. For example, in 1298 Peter the king's surgeon and his accompanying sergeant John le Mareschal can be found listed between blocks of retinues (Gough, p. 175).

[40] Ayton, pp. 122; 195; Philippe Contamine, *War in the Middle Ages*, trans. by Michael Jones (Oxford: Blackwell, 1984), p. 97.

[41] Ayton, pp. 84-86.

[42] Another raised in 1310 between Robert Mohaut, seneschal of Chester, and Sir John de Bracebridge, included the promise of 'restoration of his horses […] in times of war': B. Lyon, 'The Feudal Antecedent of the Indenture System', *Speculum*, 29 (1954), 503-11 (p. 504).

physicality of the horses and for detailed descriptions of their types and colours we must turn to the inventories.

It is unclear whether the first extant inventories of 1282 are representative of a new policy to offer *restaurum equorum* to paid retinues, or if they simply reflect an earlier, less well-documented practice. Ayton suggests that the former is more likely, pointing out that there is no evidence of previous inventories of this type or scale, and argues that their appearance in conjunction with Edward I's first attempt to 'raise a wholly paid army' was probably no coincidence.[43] One of the reasons for conscripting large numbers of stipendiary troops was so that the Crown could ensure it had at its disposal an army that was properly equipped in terms of arms and horses. The offer of *restaurum equorum* was no doubt an incentive to take up such employment, and it also benefited the Crown: to receive pay a man-at-arms had to now formally present himself and his horse to officials for inclusion in the inventories, and this meant that pre-campaign inspections became a matter of routine. Ayton also pointed out that the inconsistencies in the format of the earliest inventories is suggestive of a system that was in the 'process of development', and this deserves closer scrutiny.[44] The first extant inventory is dated April 1282 and records the retinues assembled at Devizes and Chester.[45] It is written in Latin and does not follow what was to later become the standardised format. Instead, each line is composed by firstly recording the type of horse, its colour, and markings, followed by the name of the rider and his rank, and lastly, the horse's value. The inventory raised a few months later during the main muster in Rhuddlan follows a similar format but

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[43] Ayton, p. 86.
[44] Ayton, pp. 88; 90.
[45] TNA, C47/2/5.

this time it is written in French.[46] However, at the very bottom of the first membrane the same scribal hand abruptly switches to Latin. A second scribe then takes over and continues in Latin but alters the format so that the name of each man-at-arms precedes his horse's description (this style of format no doubt made it easier to identify individuals in the lists when claims were put forward). The confusion surrounding language and formatting suggests that this was the first time that administrators had been forced to grapple with *restaurum equorum* on such a large scale.

Who were the officials behind its introduction and organisation? The responsibility of organising horse compensation fell under the remit of the Wardrobe, the main accounting department of the king's household. Those at the forefront of developing a system to record and keep track of multiple compensatory payments were men like William Louth, Keeper of the Wardrobe between 1280 and 1290, and two other officials close to the king: his Chancellor, Robert Burnell, and Burnell's clerk, William Langton. The latter may have been particularly influential in deciding the format of the inventories as he was responsible for drawing up the accounts for the second Welsh war.[47] By the late 1290s, Langton had risen to the position of Keeper of the Wardrobe, a role that allowed him to restructure the department's administrative process into a 'well-organised and analytical system', and it is likely that his reforms contributed much to the standardisation of the horse inventories during this period.[48]

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[46] TNA, C47/2/7; C47/2/6.
[47] Prestwich, *War, Politics and Finance Under Edward I*, p. 153.
[48] T. F. Tout, *Chapters in the Administrative History of Medieval England,* 6 vols (London: Longmans, Green & Co., 1855-1929)*,* II (1920), p. 15.

The inventory system was in use for around eighty years, but by the early 1370s it had been abandoned altogether. What contributed to the decision to cease offering *restaurum equorum* as a customary part of the renumeration for men-at-arms? Perhaps one of the most influential factors was the shift towards *chevauchée*-style operations with the result that the armoured horses employed in battles such as Falkirk no longer occupied a central place in military policies. The heavy administrative demands that were placed on the Wardrobe in the organisation of *restaurum equorum* may also have contributed to the eventual withdrawal of the system.[49] A closer investigation of how inventories were compiled and the role that they played in compensatory claims reveals a complex system of administration in which the warhorse was the main focus.

A key part of compiling the inventories was the inspection and valuation of the horses so that appropriate compensation could be paid. These appraisals took up time and valuable resources – in 1298 most of the 1300 or so horses were appraised over a period of 51 days between 30 May and 21 July, and in 1306 the 117 mounts in the prince's household were assessed over the course of a month.[50] The men appointed to carry out the appraisals were a mixture of royal officials and retinue captains. They included clerks of the Wardrobe such as James de Dalilegh, who was stationed at Lochmaben castle in 1301 and was appointed to appraise 'the horses of [William de] Ponton and others there that are well enough equipped for service'.[51] A

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[49] Ayton discusses the possible reasons for the disappearance of the inventories including changes in tactics, administration, and pay structures, see Ayton, pp. 121-23.

[50] Gough*, pp. 161-237; Calendar of Documents Relating to Scotland: Volume V (Supplementary),* ed. by Grant G. Simpson and James D. Galbraith (London: Public Record Office, 1970), p. 194.

[51] Daliiegh may be a variant spelling of Dawley in either Shropshire or Middlesex: Eilert Ekwall, ed., *The Concise Oxford Dictionary of English Place Names*, 2nd edn (London: Oxford University Press, 1940), p. 134.

few years later Dalilegh can be found at Carlisle supervising the appraisal of 40 horses in Sir Robert Clifford's retinue and a further 10 under John de St John.[52] Clerks such as Dalilegh (who would not necessarily have come from an equestrian background) were probably responsible for arranging and supervising the process but would have relied on the engagement of experienced military men to carry out the actual appraisals. Such was the case in 1307 when one of the king's sergeant-at-arms, William de Rue, was appointed to appraise horses at Kirkpatrick in Galloway (this was for an armed raid against the earl of Carrick, Robert Bruce).[53] He was accompanied by several eminent military men including the knights Edmund Comyn and the army's marshal, Roger de St John.[54] These men would have been experienced horsemen, capable of determining a warhorse's type and value.

Occasionally the task of appraising horses belonging to smaller garrison troops fell to whoever was in the king's pay and held a position of authority: in 1298 two horses killed at Roxburgh castle were recorded as having been valued by the castle's steward and treasurer.[55] A horse doctor, or marshal, may have been present to help assess these horses' health, but their role in the appraisal process is not documented. They were certainly active on campaigns, so it is possible that they were on hand if a horse warranted a closer inspection of its physical condition.[56] The consistency of the format of the inventories suggests that scribes had received formal instruction on how to record the information. Spelling variations indicate that the information was communicated orally: for example, the term *baucannus,* which

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[52] *Calendar of Documents Relating to Scotland: Volume V (Supplementary),* pp. 174; 191.
[53] TNA, E101/612/12, m. 5; *Calendar of Documents Relating to Scotland: Volume V (Supplementary),* p. 208. All the horses are recorded as having died.
[54] *Calendar of Documents Relating to Scotland: Volume V (Supplementary),* p. 208.
[55] *Documents Illustrative of the History of Scotland 1286-1340*, ed. by Joseph Stevenson (Edinburgh: H. M. General Register House, 1870), II, p. 268.
[56] The role of horse doctors on campaign is discussed in Chapter Six.

means a pied horse (one with a black or brown base coat overlaid with irregular white patches), appears in the inventories under several forms including *baucain, baucayne, bauzain, bauzayne* and *bauzan*.[57] These could reflect French and Italian influences (or the wide regional variations in French, including Occitan and Provençal) that may indicate the possible origin of some of the men employed to record the details.

The primary function of the inventories was as a record against which compensation claims could be verified. All claims had to undergo two stages before renumeration could be officially approved. Firstly, proof of a horse's death or illness had to be presented and secondly, its description had to be checked against its entry in the inventory. These procedures were designed to prevent fraudulent claims or the substitution of other, perhaps less valuable, horses. If the body of a horse could not be inspected (for example, if it had died some distance away) a sworn testimony from a designated official usually sufficed.[58] When officials were satisfied that the correct horse had been identified its entry was struck out of the inventory. A note was then usually added in the left-hand margin giving details of the date the horse was lost, the location, and the reason for its removal from the lists.

The payments made for horse compensation were formally recorded in a second set of documents called the *restor* accounts. These were sent to the Exchequer to form part of the official Wardrobe expenditure. The accounts follow a similar format to the inventories – they give a name followed by a description and value of each horse – but they are a less useful documentary source as they represent only those horses lost rather than those amassed for a campaign or

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[57] For example, the list of household horses mustered for the 1298 campaign include the terms 'baucain', 'baucayn', and 'bauzain' to describe pied horses (Gough*,* p. 166).
[58] Ayton, p. 77.

mission.[59] In cases where the original inventories have not survived, the *restor*

accounts can be employed as a useful complementary source, but it is the former

that offers the richest source of information. In addition to providing details of the

types, colours, and values of horses, the inventories serve as an invaluable

repository of information on how they were affected by warfare. The different terms

used to record the reasons for horse losses can be analysed to offer insights into

attrition rates in battle and raids and to also assess the toll taken by what were often

long and arduous marches.

Despite their obvious contribution to warhorse research, the inventories do

have their limitations. The greatest impediment to a comprehensive analysis is the

inconsistency of the records as many have been lost to the vagaries of time. Most of

the surviving inventories relate to Scottish campaigns, but whilst several main

inventories survive for Edward I's expeditions into Scotland (most notably, the two

very large inventories raised for Scotland in 1298), the only evidence for Edward II's

Scottish campaigns consist of numerous smaller inventories raised during the

expeditions made in 1310, 1319, and 1322. For 1314 we have no documentation at

all, but this is hardly surprising considering the loss of the Wardrobe records and

privy seal when English forces were overwhelmingly defeated at the Battle of

Bannockburn.[60] Our only knowledge of the 2000 or so horses that were ridden by

men-at-arms at Bannockburn are some scattered references to petitions or

payments made for lost horses, and a dozen or so wardrobe debentures.[61] Even

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[59] For examples of restor accounts for 1299-1300 see Topham, pp. 155-87, and for 1324-1325 see BL, Additional MS 26891, fols 60-62.

[60] Tout, *Chapters in the Administrative History of Medieval England,* II (1920), p. 237.

[61] For example, *CCR*, Edward II, 1313-1318, pp. 112; 128-29; 365; 714. Wardrobe debentures were credit notes that could be exchanged for cash. For debentures relating to horses lost at Bannockburn see TNA, E404/482/31. The debentures amount to over a dozen petitions for payment of horses lost in the battle including eighty pounds for John le Hasche's horse and fifty pounds for an 'equus magnus' (great horse) belonging to Richard de Grey.

when we have access to the larger inventories such as those compiled in 1298 they

do not necessarily reflect the full quota of paid men-at-arms active during a single

campaign, only those who assembled at the muster and not others who joined later

in the expedition.[62] We must also consider the restrictions imposed by the fact the

inventories list only stipendiary troops and therefore they are representative of only a

small proportion of the total number of men-at-arms present on campaigns. For

example, the full force of cavalry in 1298 is estimated to have numbered around

3,250, so the corresponding inventories contain information on only 40 per cent of

the warhorses taken on the expedition.[63] The remainder belonged to men who

served without pay as part of their feudal obligations, and consequently, we know far

less about their horses. Despite this, the small subsection of horseflesh we have at

our disposal is probably reflective of the types and values of the mounts ridden by

unpaid troops – social status and the reliance placed on horses in battle meant that

turning up to muster on good quality animals was essential.

The inventories offer a plethora of detail on the types and colours of

warhorses, but they also omit some other important details. The horses' ages and

heights are not recorded, perhaps because this kind of information was considered

superfluous to horse descriptions when colours and markings were already noted.

Lastly, we must acknowledge the difficulties posed in analysing records that span a

long period of time and were compiled by a multitude of different people: fluctuations

in terminology might erroneously imply changes in horse types; the subjective

opinions of the men employed to appraise horses could cause inconsistencies in

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[62] Many smaller inventories were raised throughout a campaign. For example, in September 1298 over 50 horses were appraised in Carlisle and Berwick (TNA, E101/7/5).
[63] Michael Prestwich, 'Edward I's Armies', *Journal of Medieval History*, 37 (2022), 233-44 (p. 235).

prices, and the possible inflation of numbers and values due to fraud might inflate some figures. Take, for example, the order issued in 1312 by Edward II to Stephen Bygod and John de Luk to head an investigation of all the castles in England and Scotland to verify if the numbers of knights in pay were accurate, and if their horses were appraised at their true value.[64] Despite the suggestion that some of the inventory information might not always be entirely accurate, this was likely limited to only a very small proportion of the documents. The information in the records needed to be kept as consistent and as error-free as possible, and the steps taken by Edward II suggest that the inventory system was kept closely monitored. As such, these documents present an unparalleled source of information on the presence of warhorses in the campaigns of the period.

Equitium Regis Accounts

Although the inventories provide much information on the types of warhorses taken on campaign, they unfortunately do not offer details of the horses' origins. Fortunately, we can turn to another important corpus of documents that provides information on the breeding and management of horses, many of which were destined to become warhorses. These records are known as the *equitium regis* accounts and they comprise an extensive collection of manuscripts that relate to the expenses of the royal horses.[65] They are extant from 1282 to the reign of James I (1603-1625) and contain over 400 records of which almost a third relate to the reigns of Edward I and Edward II. The accounts form a substantial but somewhat fragmented series of documentary evidence that at first glance appears to comprise

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[64] *CPR*, Edward II, 1307-1313, p. 531.
[65] TNA, King's Remembrancer Accounts (Accounts Various, E101: Equitium Regis).

a bewildering array of rolls, bundles, and single folios, many of which vary in their content and format. For clarity, these can be divided into two main groups: costs relating to the royal studs and expenses of horses in the king's stables. Many of the records have been lost to time, and a careful estimation of the number of annual accounts submitted to the Wardrobe across both groups suggests that perhaps less than 40 per cent of the original records are extant.[66] For example, only one complete roll of annual stable expenses has survived, and we are forced to resort to investigating the somewhat patchy set of sub-accounts on which they were based.[67] Fortunately, the stud records are more plentiful in volume, and the large number of accounts generated by horse breeding suggests that warhorse production was a major project. Although like the stable accounts they are far from complete, locations such as Woodstock and Odiham are particularly well represented, offering details of birth rates and overall horse numbers across both reigns.

Determining the date on which the *equitium regis* accounts were first raised is problematic. There are no comparable documents prior to the reign of Edward I although this is not to say that such expenses were previously unrecorded – payments for horses and references to studs under Henry III can be found in various Chancery records - but these did not generate the type, volume or breadth of records we find in the *equitium regis* accounts.[68] The earliest records date from 1282 and relate to the expenses of the king's horses stationed at Chester, but the bulk of

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[66] This is a conservative calculation based on an overview of the different types of accounts in the records. These include stable accounts, separate accounts for destriers and palfreys located outside the court, harness expenditure, lists of overall horse numbers, stud accounts, stallion lists, and sales of stock. It is assumed that these main accounts would be submitted to the Wardrobe on an annual basis, if not more often.
[67] TNA, E101/97/30.
[68] For an early reference to the stud at Woodstock see 'Fine Roll C 60/27, 12 Henry III (1227–1228): Membrane 9', *Henry III Fine Rolls Project* (2023), item 272, <https://finerollshenry3.org> [accessed 28 August 2023].

surviving accounts are from 1289.[69] The dearth of records between these dates can

be partly explained by Edward I's stay in Gascony between 1286 and 1289: the

Wardrobe accompanied the king during this expedition and this disruption resulted in

English accounts being left in a 'notorious administrative disorder' with much material

left unaccounted for.[70] If the account for Chester is indeed the first record produced

by a new administrative system then there must be a reason for its implementation at

this time. The year 1282 is already significant in terms of warhorses for three

reasons: it marked the beginning of wide-scale *restaurum equorum;* it was notable

for Edward's decision to issue a statute ordering certain landowners to keep a

suitable warhorse at the ready, and in the same year France - a popular source of

warhorses for the first Welsh war - issued a ban on warhorse exports, effectively

closing the nearest available market.[71] Such events bring the need for warhorses

sharply into focus, and it is therefore tempting to suggest that these events and the

appearance of the *equitium regis* accounts reflect a turning point in the Crown's

attitudes towards warhorses. When measured against the backdrop of concerns over

the number and quality of warhorses available in England, the *equitium regis*

accounts may reflect that serious investments were being made in warhorse

production, ones that required a robust system to record expenses and monitor

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[69] TNA, E101/97/2. The dates of several documents are unclear and are therefore recorded in the National Archives as being made sometime between 1272 and 1327. These include E101/98/40 (Expenses of the queen's carriages); E101/98/39 (Schedule of carts and carriages); E101/99/2 (Purchases of hay and corn); E101/99/1 (Purchases of horses for the queen); E101/99/5 (Memorandum as to various horses); E101/99/4 (Part of a book of payments to Adam Blida); E101/99/3 (Details of the stables between Berwick and Doncaster). These accounts are unlikely to date prior to 1289, and the latter two were almost certainly issued after 1290.

[70] Tout*, Chapters in the Administrative History of Medieval England*, II (1920), p. 65. For example, Tout notes there are no extant charter rolls or wardrobe accounts in English chancery rolls between 1286 and 1289, (p. 63).

[71] *Parl. Writs,* I, p. 226. The role of France as a market for warhorses is discussed in Chapter Three.

success. If renewed royal interest in breeding was designed to set a precedent it appeared to be successful: Ayton's analysis of warhorse values shows that from the 1280s their prices increased to such an extent this period can be referred to as an 'Edwardian horse breeding revolution'.[72]

Who was responsible for compiling the stud accounts, and what was the format of the accounts? The men appointed to oversee the administration were termed *custodes*, or 'keepers', and they played an active role in the organisation and management of the studs. Prominent under Edward I were William Wyth and Richard Foun.[73] Both men submitted expense accounts for the king's studs, but the latter also enjoyed a special position as manager of the studs' warhorses - he is variously described as *custodi magnorum equorum* (keeper of the great horses), *custodi dextrariorum* (keeper of the destriers), and *custodi magnorum equorum ad arma* (keeper of the great warhorses) in the Wardrobe accounts.[74] A change of keepers occurred under Edward II with the appointment of William Beauxamys, who was active until *c.* 1317 when John de Redmere took his place.[75] Working under these men were grooms listed in the accounts as *garciones* (usually abbreviated to *garcon'* or *garcioni'*). They were paid 2d. a day and may have been adolescents or older men employed to see to the horses' daily care. In a more subservient position were *pagii* or *pagetti* (abbreviated to *pag'*), who received 1d. a day in wages, and

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[72] Ayton, p. 212.
[73] For Wyth see TNA, E101/97/14; 15; 16; 17; 21; 22; 23; 25; 26. For Foun see TNA, E101/97/24; 28; 27; 29; 30.
[74] Byerly, I (1977), pp. 31; 169; Byerly, II (1986), p. 217.
[75] For Beauxamys see TNA, E101/98/2; E101/99/9; 10; 11; 12; 14; 16; 17; 22; 23. For examples of Redmere's accounts see TNA, E101/99/27 and E101/100/12.

these may have been young boys in training whose jobs included menial tasks such as cleaning out the stalls.[76]

The stud records comprise a variety of annual and occasionally quarterly accounts which began and ended with the regnal year. Some documents give only the numbers of horses whilst others incorporate both numbers and expenses, suggesting that that regular surveys were carried out as part of the annual accounting system.[77] The documents vary in the number of studs they cover with some containing information on only one location, others several. The inconsistency of the records makes it unclear why this was so, but it may have been normal practice to raise an account for each stud and then to later combine the information into a single record before submission to the Wardrobe. The format of the accounts is remarkably consistent throughout the reigns of both kings, suggesting a well-organised system of administration. They contain two important sources of information: the number of horses at each location, and their associated expenses. The horses are listed in a hierarchy of importance with the number of stallions appearing first, followed by mares and youngstock, the latter of which were listed by their age and sex. Of particular interest are the marginal annotations which give the dates that the stallions were brought in and out of the studs. This offers the opportunity to understand when and how breeding operated, and in some cases to track the stallions' movements around the stud network. Lists of stud expenses follow the number of horses and these follow a carefully prescribed order: hay and oats, followed by other feeds such as bran, then straw, candles, and lamps, and

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[76] The terms 'garciones' and 'pagii' are also found in manorial accounts to describe low-status labourers, see Jordan Claridge and John Langdon, 'The Composition of *famuli* labour on English Demesnes, *c.* 1300', *Agricultural History Review*, 63 (2015), 187-220, pp. 201-02.
[77] For example, TNA, E101/97/12 gives the numbers of stallions, mares, and youngstock in various studs across Wales and England; E101/97/22 provides only the numbers of stallions at Woodstock.

lastly the wages paid to the *garciones* and *pagii*. Where there are supplementary expenses for items such as medicines and harness, these are usually added as an appendix. The latter details are particularly informative as they almost always appear in connection with youngstock and can be analysed to help our understanding of how they might have been trained.

Although the stable accounts are incorporated within the *equitium regis* records they offer information on horses external to the stud network. These records can be subdivided into four types: expenses of the horses traveling with the royal court; surveys of the king's personal stable; remount accounts; and sundry lists of costs of the purchase and repair of items such as carts and harness. Unfortunately, only one example of each of the first two types survives extant.[78] Most interesting is the survey conducted in 1305 of the king's personal stock of horses. This gives a total of 19 destriers, or warhorses, 6 of which were owned by the queen.[79] The records of the remount horses are better represented although much less so than those relating to the royal studs, and those that remain relate only to the reign of Edward II. They recorded the daily expenses of feed and stabling for large groups of horses that were kept in reserve for members of the royal household. These groups – each comprising up to 40 horses – were under the care of keepers such as Giles Toulouse and Adam de Bray and the horses led a largely itinerant lifestyle, being

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[78] TNA, E101/97/13; TNA, E101/613/15. The first roll dates from 20 November 1292 and gives the expenses of the king's household horses whilst the king was attending a ceremony at Berwick to crown John Balliol King of Scotland. It starts with a total of 224 horses of which 144 are assigned to the carts and baggage train and 28 to the king. The remainder are made up of palfreys (riding horses) used by royal family members and officials.

[79] TNA, E101/613/15. As only a single survey survives it offers a limited view of the king's personal stock, but it is interesting for the inclusion of the warhorses' names. The names are all binominal and consist of the horse's colour and another word that possibly indicates their origin. For example, 'Liard Knaresborough' and 'Morel Woodstock' could have been roan and black destriers from the studs in those locations. The origin of a pied destrier named 'Bausan Noble' is less clear.

moved regularly around various counties to help lessen the demands placed on local sheriffs to supply feed, stabling, and wages for the traveling grooms.[80]

There are three main drawbacks to using the *equitium regis* accounts as a source for warhorses. Firstly, they provide documentary evidence of warhorse breeding by royalty and therefore offer insights into only a small proportion of the horses produced for warfare. The absence of stud records from other members of the English aristocracy is regrettable and makes this constraint unavoidable, but it is unlikely that the nobility's methods to produce warhorses differed widely from royal practice. Secondly, the ambiguity of medieval terminology poses some difficulties: not all the clerks in charge of keeping the records were concerned about making it clear what type of horses were under their care. The remount accounts are particularly difficult in this respect as in many cases all the animals are referred to under the collective term *equi* (horses). Only occasionally are horse types clearly specified. For example, we find a courser (hunt horse) and a palfrey being given to Piers Gaveston on his return from exile on 31 July 1307, and the two other mounts sent to Scotland ten days later are clearly listed as *dextrarii*, or warhorses, but such clear delineations are frustratingly infrequent.[81] We fare better with the stud accounts but even so, caution must be taken to not assume that the studs were exclusively given over to the breeding of warhorses: the inclusion of a palfrey stallion in the studs of Woodstock and Reading in 1292 and 1312, and a courser at Windsor in

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[80] The demand on sheriffs to provide supplies for the royal horses was unlikely to have been popular. For example, on 6 April 1315 the sheriff of Dorset was charged with supplying hay, oats, and straw for forty of the king's horses staying at the manor of Sherborne. In addition, he had to pay two pence a day in wages to each of the forty grooms and six pence a day for the wages of Adam de Bray. A similar writ was issued the same day to the sheriff of Gloucester, where Giles Toulouse was staying with a further 32 of the king's horses. See *CCR*, Edward II, 1313-1318, pp. 171-72.

[81] TNA, E101/99/6, m. 2.

1321, suggests that other types of elite horses were also produced there.[82] These types of horses appear to be in the minority and for the most part clerks did take pains to identify breeding stallions that were not warhorses, meaning that we can be reasonably confident in our handling of these sources as evidence of warhorse breeding. Thirdly, the accounts offer evidence of equine health care, but we need recourse to other sources to understand why certain procedures were carried out; likewise, they provide lists of equipment purchased for youngstock, but these need further clarification as to their purpose. Fortunately, we have at our disposal one type of source that can be employed to help illuminate the information supplied by the *equitium regis* accounts: hippiatric treatises.

Hippiatric Treatises

Hippiatric treatises are manuals dedicated to the diagnosis and cure of horse diseases and ailments. Despite being primarily designed as veterinary texts some are prefaced with commentaries on related topics such as conformation (the physical form of a horse), breeding, and training. This makes them useful sources for investigating the intellectual frameworks surrounding medieval horse care and handling. They are particularly important for the study of elite horses produced by Edward I and Edward II as hippiatric authors focused their works on the *equus nobilis*, or noble horse, an animal 'by which princes, magnates, and knights are separated from lesser men'.[83] The epitome of the noble equine was the warhorse, and this is made clear by some of the most significant hippiatric authors of the Middle Ages: Jordanus Rufus of Calabria (*c.* 1200-1256) dedicated his work

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[82] TNA, E101//97/12; E101/99/14; E101/99/27.
[83] Jordanus Rufus, p. 1.

'especially for those who delight in the nobler spirit of military honour and constant probity in war'; another Italian hippiatric writer, Laurentius Rusius (1288-1347), described the subject of his treatise as the horse by which 'the greater glory of princes is lifted higher, the hearts of kings become great, battle lines are arranged, and enemies overcome'.[84]

Unfortunately, evidence of hippiatric texts produced in England before or during the reigns of Edward I and Edward II is sparse – only a single manuscript survives extant, and its author is anonymous. It is recorded under the title *Practica equorum* and is an early example of a wider continental group of *practica* or *chirurgia equorum* texts (medical practice or surgery for horses) that began to be produced in Europe from the late thirteenth century.[85] The treatise is of unknown provenance; it is written in Gothic Textura minuscule and dates to the latter part of the thirteenth century. Unfortunately, the *Practica equorum* is somewhat limited as a source for this project as it is almost entirely given over to the diagnoses and treatment of horse diseases. However, it does include a short section on the ideal conformation of horses, much of which is based on the description of horses given by Isidore of Seville (560-636) and Albertus Magnus (*c.* 1200-1280). It also includes a brief set of instructions for recognising and curing a restive, or incalcitrant horse. To discover more about practical horse breeding and training we must turn to hippiatric texts produced outside England.

The most influential hippiatric author of the Middle Ages was the aforementioned Jordanus Rufus of Calabria, an experienced horseman who

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[84] Jordanus Rufus, p. 1, 'Ipsorum specialiter, qui ad honorem miltarem et bellorum assiduam probitatem nobiliori animo delectantur'; Laurentius Rusius*,* p. 2, 'Per hos enim effertur altius gloria principum, regum corda grandescunt, struuntur acies, hostilia consternuntur'.
[85] BL, Additional MS 35179, *Practica equorum*, fols 20ᵛ-30ᵛ.

described himself as a *miles in marestalla*, or knight farrier, in the court of the Holy Roman Emperor Frederick II. His treatise *De medicina equorum* (On the Medicine of Horses) became the foundation text for many of the hippiatric treatises that followed and was translated into several languages including Italian, French, and German.[86] Jordanus attributed his diagnoses and cures entirely to personal observation and his own experience of administering to the health of horses.[87] Considering the popularity and widespread circulation of Jordanus's text it is likely that his work reached England sometime around the late thirteenth and early fourteenth centuries, perhaps via Italian merchants, some of whom were prominent in the supply of elite horses to the English aristocracy. Copies might have been sourced for Edward I and Edward II as both had a keen interest in horses and the latest hippiatric texts would have been welcome additions to their libraries. The anonymous author of the *Practica equorum* may also have had knowledge of Jordanus's treatise: ancient and contemporary writers on horses followed the tradition of placing horse colours into a hierarchy of desirability, but this was not followed by either the *Practica equorum* or Jordanus. Both authors were surprisingly reluctant to engage with the subject and both made almost identical statements that there were 'diverse opinions' on the subject.[88] This is admittedly a tentative connection (and only a lengthy comparison of sources could confirm such a supposition), but it does suggest a similarity of thought.

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[86] Harrison*,* 'Jordanus Rufus and the Late-Medieval Hippiatric Tradition: Animal-Care Practitioners and the Horse', pp. 2; 48. For Vegetius' text on veterinary medicine see *P. Vegeti Renati digestorum Artis mulomedicinae Libri*, ed. by Ernest Lommatzsch (Leipzig: B. G. Teubner, 1903).

[87] Jordanus Rufus, p. 1; There is little evidence that Jordanus based his work on earlier texts. See Harrison, pp. 33; 37; Klaus-Dietrich Fischer, 'A horse! a horse! my kingdom for a horse!" Versions of Greek Horse Medicine in Medieval Italy,' *Medizinhistorisches Journal*, 34 (1999), 123-138 (pp. 130-31).

[88] *Practica equorum*, fol. 20ᵛ; Jordanus Rufus, p. 18. For hierarchies of horse colours see Isidore of Seville, p. 249; Albertus Magnus, p. 1378.

There are around 173 extant copies of Jordanus's treatise and this thesis relies on what is considered to be the most reliable edition of Jordanus's work - the printed Latin version produced by Hieronymus Molin in 1818.[89] This is divided into two parts: the first deals with various aspects of horse management and the second, larger section, comprises chapters that address a wide range of horse diseases and their cures. This project considers mainly the first part as it contains sections on horse breeding and training. The first part is divided into six chapters:

1. *De generatione et nativitate equi* (On the reproduction and birth of a horse)

2. *De captione et domatione eisdem* (On the capture and taming of the same)

3. *De custodia et doctrina equi* (On the keeping and training of a horse)

4. *De cognitione pulcritudinem corporis* (On recognising the beauty of the body)

5. *De aegritudinibus naturaliter contingentibus* (On naturally occurring sicknesses)

6. *De accidentalibus infirmitatibus vel lesionibus equi* (On the accidental infirmities and lesions of a horse

The first three chapters are particularly useful for understanding much of the information supplied by the *equitium regis* records. The first offers an overview of the methodologies of horse breeding, including care of stallions and mares, and the management of youngstock up to the age of three. The second chapter deals with capturing these young horses and the initial stages of taming them in preparation for a career under saddle. Chapter Three is subdivided into four parts covering the

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[89] Harrison assessed the reliability of Molin's work and concluded that it was one of the best versions of Jordanus's treatise: Harrison*, '*Jordanus Rufus and the Late-Medieval Hippiatric Tradition: Animal-Care Practitioners and the Horse', p. 50.

following topics: the daily care of stabled horses; shoeing; training a horse to carry a rider, and lastly teeth, bits (the metal mouthpieces of bridles), and further advice on more advanced training. Chapter Four offers advice on judging the conformation of the ideal horse, and this is particularly relevant to considering the physicality of warhorses. Chapters five and six are less useful but do offer an insight into which diseases were thought to be inheritable.

Chapters Two and Three are perhaps the most interesting as they are the only source of information on how horses were trained in the Middle Ages - although classical authors such as Xenophon (*d. c.* 355 BC) produced texts on horsemanship, it was not until the publication of Fredrico Grisone's *Gli ordini di cavalcare* (The Rules of Riding) in 1550 that a work appeared explaining the technical aspects of horse training.[90] However, Jordanus's work is not without its limitations. His chapters are brief – only around 800 words are dedicated to taming and training, far less than is given over to the diagnosis and treatment of diseases. Despite this, they offer the opportunity to gain an insight into the theories that underpinned horse training, and this can be used to flesh out the information supplied by the *equitium regis* accounts. In particular, Jordanus's description of the equipment used to train horses can be compared to the articles purchased for the royal studs in England. This can aid our comprehension of why and how they were used.

Other hippiatric texts can be incorporated to help supplement Jordanus's work. The *Practica equorum* has already been discussed, but a later work by the Italian practitioner Laurentius Rusius (1288 -1347), *Liber marescalciae equorum* (The Book of the Marshalling of Horses)*,* is also useful. Laurentius described himself

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[90] Xenophon, *The Art of Horsemanship,* ed. and trans. by Morris H. Morgan (New York: Dover Publications, 2006); Federico Grisone*, The Rules of Riding,* ed. and trans. by Elizabeth MacKenzie Tobey (Tempe, Arizona: Arizona Center for Medieval and Renaissance Studies, 2014).

as a *marescalcus,* or marshal, of Rome and dedicated his work to Cardinal Napoleone Orsini (*d.* 1342).[91] Laurentius based much of his treatise on Jordanus's work but was able to greatly expand on it by drawing from 'various works of lofty persons'.[92] These are not named, but Harrison posited that Laurentius may have used works such as Boniface of Calabria's *Libro de la marescalcaria* ('Book of Marshalcy', *c.*1275) and Theodoric Borgognoni's *Mulomedicina* ('The Medical Treatment of Mules', *c.* 1280).[93] Like Jordanus, Laurentius was also keen to point out that his work was also based on personal observations, explaining that 'it is not the author's learning, but experience that makes skill'.[94] The *Liber marescalciae equorum* comprises 45 chapters on horse breeding and the care and management of horses and a further 136 chapters on the diagnosis and cure of various diseases. Laurentius includes opinions on horse colour, castration, and the role of mares in inheritability, subjects that Jordanus was either reluctant or unable to include in his treatise.

The hippiatric treatises produced by influential authors such as Jordanus stand as testimonies to ideas on medieval horse care and provide the intellectual frameworks needed to properly analyse the information found in English royal documents. When these primary sources are brought together and analysed using my grounding in practical horsemanship they contribute to a wider understanding of the warhorse.

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[91] Laurentius Rusius, p. 1. Laurentius describes himself as Cardinal Orsini's 'devotissimus servitor', or devoted servant, but his position is unclear. The term 'marshal' denotes a horse healer. For a discussion of the development of the term see Harrison, pp. 62-63).

[92] Laurentius Rusius, p. 4, 'Varia sublimium personarum opera'.

[93] Harrison, 'How to Make a Warhorse,' p. 6. Harrison points out that Boniface's veterinarian text is known only through manuscripts such as BL, Add. MS 15097, ff.1–52v; on Theodoric's *Mulomedicina* see Martina Schwarzenberger, 'Die Mulomedicina des Teodorico di Cervia. Neue Perspektiven mittels einer interdis ziplinären Annäherung', *Pallas,* 101 (2016), 323-36.

[94] Laurentius Rusius, p. 4, 'Non auctoris doctrina, sed experientia facit artem.'

CHAPTER TWO: THE WARHORSE

If asked to form an image of the warhorses ridden by men-at-arms, most people would imagine a group of horses that were all similar in height, shape, and colour. For many military historians, warhorses are simply a homogenous collection of animals ridden in cavalry retinues, and little attention has been paid to what these horses may have looked like, or the similarities and differences between one warhorse and another. To properly understand what warhorses looked like, we must first begin by asking what types of horses were ridden by men-at-arms on campaign. It has already been acknowledged that the men appraising horses for *restaurum equorum* placed them into the three categories, or types (destriers, *equi,* and rounceys), but apart from the differences in their values, little is known about how these types differed from one another. Once the military definitions of warhorse types are understood, further questions about the visual appearances of warhorses can be asked: what colours were they, and were all warhorses stallions? This chapter aims to illuminate our understanding of warhorses by examining the inventories with the horse as the focus. The resulting information is contextualised using several other important sources on warhorses such as manuscript images, hippiatric ideals, and archaeological reports. This multi-disciplinary approach aims to provide a thorough and realistic portrayal of the warhorses ridden by men-at-arms.

A Lexical Note

It is appropriate to begin an analysis of the different types of horses taken on campaign by firstly explaining what is meant by 'type'. This term is not to be confused with the modern concept of 'breed'. A breed of horse is a group of horses

selectively bred for certain characteristics with their lineage recorded in written

registries. This system of formal record-keeping only became important in the late

eighteenth century when specialist societies were formed to control the production of

certain groups of horses.[95] This was done to ensure that different breeds could be

clearly defined so that each breed's particular characteristics could be preserved.

These characteristics included conformation (overall body shape and proportions),

height, temperament, and colour. To be registered as a particular breed, a modern

horse must be able to prove its pedigree and undergo an assessment to make sure it

conforms to the physical standards laid down by its breed society (for example, an

Exmoor pony can only be between 116-19 cm in height and can only be bay, dun, or

black colour).[96] In medieval England there is no evidence that distinct breeds were

recognised. Instead, horses were differentiated by type, and this usually reflected the

kind of role it carried out. For example, a horse that was used for carrying supplies

was referred to as a sumpter and one commonly associated with hunting was

defined as a courser.[97] However, medieval equine terminology existed in a fluid

environment, meaning that some words were used generically or changed meaning

depending on the time and context. For example, both a baggage horse and courser

could be referred to under the umbrella term *equus*, and later during the reign of

Edward III some of the warhorses ridden by knights on campaign were termed

coursers.[98] The flexibility of equine terminology means that care must be taken when

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[95] One of the earliest breed registries in England was the General Stud Book. This was begun in 1791 to record the pedigrees of thoroughbred horses: *Wetherbys General Stud Book*, <https://www.weatherbys.co.uk> [accessed 20 December 2023].
[96] Exmoor Pony Society (2023), <https://exmoorponysociety.org.uk> [accessed 20 June 2023].
[97] Sumpters appear regularly in household accounts, for example, in 1286 Thomas the marshal claimed expenses for a sumpter carrying the queen's jewels, see Byerly, II, (1986), p. 11. For eleven coursers sent to the king to ride in a hunt in the forest of Alrefen, Colchester, see Byerly, I (1977), p. 208.
[98] Ayton, p. 66.

determining the meaning of horse words, both in and outside the military. Medieval

clerks could also find dealing with horse terms somewhat difficult, and this is evident

in records relating to the purchase of 19 warhorses for Edward II in 1315. The scribe

recording the transaction used three different terms to describe the same horses:

equi (horses)*, dextrarii* (destriers), and *equi magni* (great horses), perhaps to ensure

there was no misunderstanding of the type of horses being purchased.[99]

Horse Types

Royal army officials separated the warhorses ridden by paid troops into three main

types: destriers (*dextrarii*), horses (*equi*) and rounceys (*runcini*). This suggests that

there existed a consensus on the characteristics of each type, although as we shall

see, the exact delineation of each type was sometimes the subject of debate. The

table in Figure 2.1 gives the percentages of destriers, *equi,* and rounceys in some of

the extant inventories raised for campaigns in the reigns of Edward I and Edward II.

An analysis of the data reveals some interesting features. Destriers appear only in

low numbers - rarely do they represent more than 4 per cent of the total number of

horses on a campaign. They are entirely absent from the inventories raised for the

second Welsh war in 1282, and only make an appearance in the lists of appraised

horses from 1297 onwards. Most of the warhorses in the inventories are classified as

either rounceys or *equi.* Rounceys make up three-quarters of the number of horses

taken on campaign up to the turn of the fourteenth century, but their numbers then

dwindle until they disappear from the horse lists raised under Edward II.

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[99] Trokelow*,* pp. xxv-xxviii. Marina Viallon states that the term 'great horses' was synonymous with warhorses, but in reality, it was used to describe any horse of value owned by the aristocracy. For example, at Chester in 1282 the horses used to pull the long carts of the Wardrobe were termed 'magni equi' (TNA, E101/97/2): Marina Viallon, 'Fiers destriers: images du cheval de guerre au Moyen Âge', *Le cheval et ses patrimoines* (2015), pp. 1-15 (p. 3), <https://doi.org/10.4000/insitu.11901>.

Date	Campaign	No. of horses	% Destriers	% Equi	% Rounceys
1282	Wales	635	0.00	26.75	73.25
1297	Flanders	623	1.76	20.87	77.37
1298	Scotland	1356	2.80	21.53	75.67
1301	Scotland	479	3.76	94.36	1.88
1303	Scotland	806	1.49	96.89	1.62
1311-1312	Scotland	970	4.32	95.67	0.00
1313-1314	Scotland	179	5.03	94.97	0.00
1324	Gascony	180	1.67	98.33	0.00

Figure 2.1: Percentage of horse types 1282-1324[100]

By the second decade of the fourteenth century, it is the *equi*, which formerly represented around a quarter of the horses taken to war, that have become the numerically dominant horse ridden by mounted troops. These figures are useful for showing the proportionate numbers of horse types in the inventories and raise several questions: what were the differences between each type of horse; why were destriers absent from lists of horses in the second Welsh war, and why were destriers subsequently only present in small numbers, and lastly, why did rounceys disappear from the inventories? To answer these questions, it is necessary to first look at each horse type independently.

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[100] Sources: Wales, 1282: TNA, C47/2/7; Flanders, 1297: TNA, E101/6/37; Scotland, 1298: Gough, pp. 160-237; Scotland, 1301: TNA, E101/9/24; Scotland 1303: Michael Alexander Haskel, 'The Scottish Campaign of Edward I, 1303-4' (unpublished Master's dissertation, Durham University, 2008), pp. 70-71; Scotland, 1311-1312: Bain, III (1887), pp. 413-32; Scotland, 1313-1314: TNA, E101/14/15, mm. 2; 4; 5; Gascony, 1324: TNA, E101/16/38.

<u>The Destrier</u>

Of the three types of warhorses used by troops the destrier is significant for its cultural connection with high status and warfare. The origin and meaning of the term destrier (OF *destrer* / *destrier*; Latin *dextrarius*) is obscure although it has been suggested that it means 'led by the right hand' due to the belief that warhorses were led to battle to conserve their energy.[101] In England, the term first appears in written texts during the first half of the twelfth century. The Great Pipe Roll of Henry I lists debts owed to the Crown, some of which could be partially satisfied by handing over a destrier. For example, in 1130 Anselm de Chocques is recorded as parting with 170 silver marks and five destriers to recover his English lands; Guy Malfeth is listed as having to hand over a destrier so that he could be 'dealt with justly in the court of his lord'.[102] The term also appears in *chansons de gestes* around the same time. A manuscript copy of the epic poem *Song of Roland,* produced in England *c.* 1125 features the battle between Charlemagne's army and Saracen Spain in 778, in which knights prepared for battle by leaving behind their other horses and mounting their destriers.[103] In the popular Arthurian tales that circulated in the courts of Edward I and Edward II the destrier was also portrayed as the *sine qua non* of the mounted knight, without which he was unfit to fulfil his duties.[104] In Chrétien de Troyes'

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[101] Davis, pp. 4-20 (p. 5). Also see the following definitions: 'Dextrarius' in *Logeion*, *Latin and Greek Dictionary*, <https://logeion.uchicago.edu/dextrarius> [accessed 25 June 2023]; 'Destrier' in *Dictionnaire du Moyen Français* (1330-1500), <http://www.atilf.fr/dmf> [accessed 25 June 2023]; 'Destrier' in *Etymonline*: The Online Etymology Dictionary, <https://www.etymonline.com/word/destrier> [accessed 25 June 2023].

[102] *The Great Roll of the Pipe for the Thirty First Year of the Reign of Henry I Michaelmas 1130 (Pipe Roll 1)*, ed. by Judith A. Green, (London: Pipe Roll Society, 2012), pp. 66; 67. The Pipe Roll of 1130 is the first extant Pipe Roll, although they were begun earlier.

[103] Oxford, Bodleian Library, MS Digby 23, Part Two, fol. 18ᵛ. For a complete edition of the various versions of the French corpus of this poem see *La Chanson de Roland – The Song of Roland: The French Corpus*, ed. by Joseph. J. Duggan and Karen Akiyama (Turnhout: Brepols, 2005).

[104] Edward I was known to possess copies of Arthurian literature and Eleanor, his queen, had an extensive library of similar works. The 10ᵗʰ Earl of Warwick, Guy Beauchamp (*c.*

Perceval the knight Gawain is described as 'every inch a knight', when he is mounted on his destrier, but when he is forced to ride his squire's rouncey he is derided for being on a horse of lower status.[105] The trope that horses could reflect the rider's social standing appeared in a wide range of texts. The hippiatric author Jordanus Rufus (*c.* 1200-1256) pointed out that 'it is by noble horses that princes, barons, and knights are separated from lesser people', and the Catalan chivalric author Ramon Lull (1232-1316) stated in his work *The Book of the Order of Chivalry* that the 'noblest beast [was] assigned to the noblest man'.[106]

The destrier's connection to aristocratic status in literature and didactic texts was reflected in the inventories for these types of horses only appear alongside the names of the most wealthy and powerful men. This was due to the destrier's high value. Figure 2.2 gives the price ranges and mean values of over 1300 horses listed in the inventories raised for the Scottish campaign in 1298. The mean value of destriers is £35, considerably higher than the mean values of *equi* (£20) and rounceys (£8). Some destriers were of exceptional quality: Hugh Despenser (1261-1326) has a piebald destrier worth £80, and Walter Beauchamp, steward to Edward I, was able to bring two destriers on the campaign, their total value being £89.[107] The lowest valued destriers are worth much less – only £13 – and this disparity in prices must have reflected that some destriers were devalued on account of their age or

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1272-1315), who distinguished himself at the battle of Falkirk in 1298, had an extensive library. Forty-two of his books were donated to the Abbey of Bordesley in 1306 and these included Arthurian tales including Lancelot and a volume titled '*de la mort ly Roy Arthur*' or 'on the death of King Arthur'. See Prestwich, *Edward I*, pp. 18; 23; Henry J. Todd, *Illustrations of the Lives and Writings of Gower and Chaucer* (London: F.C. and J. Rivington, 1810), pp. 161-62.

[105] Chrétien de Troyes, *Arthurian Romances*, trans. by D. D. R. Owen (Guernsey: Guernsey Press, 1987), pp. 468-71.

[106] Jordanus Rufus, p. 1; Llull, p. 40.

[107] Gough, pp. 183; 187.

condition.[108] Such valuations appeared to be broadly reflective of market prices: the mean price of 19 destriers purchased by the king from Italian merchants in 1307 was £26, although one horse was valued at £80, and a destrier purchased from the merchant William Toulouse in 1315 cost £75.[109]
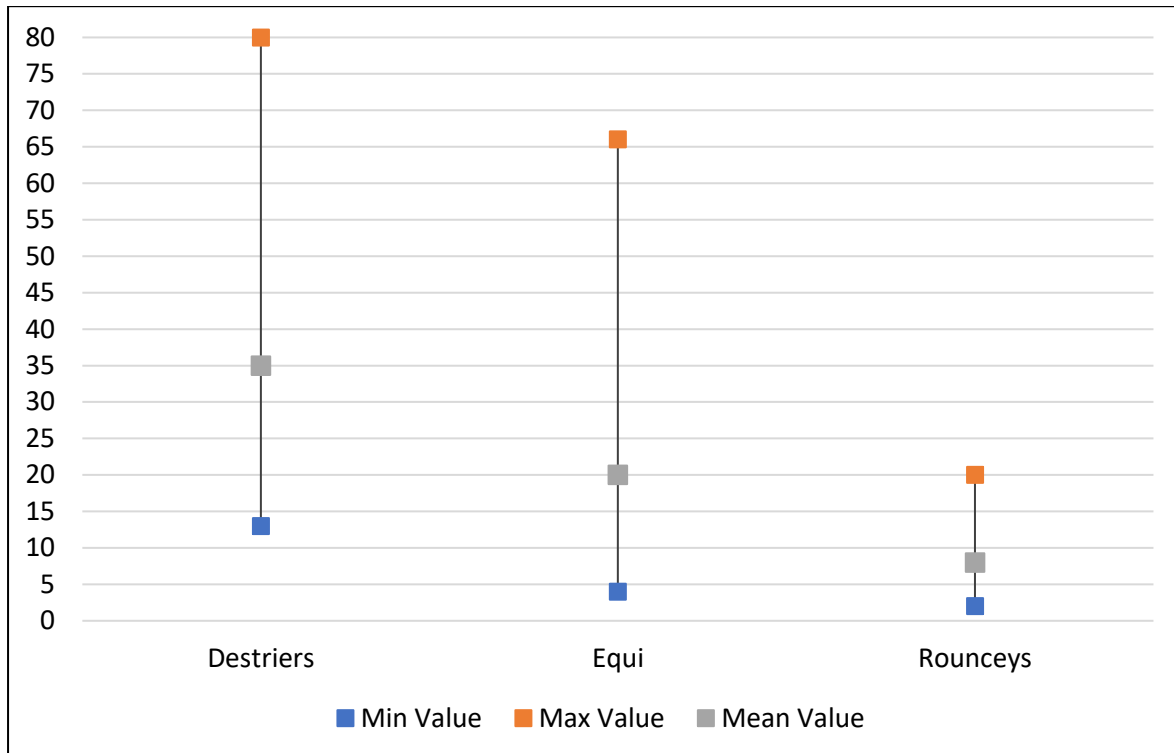
Figure 2.2: Range of warhorse values (in pounds) in 1298[110]

The complete absence of destriers in the inventories raised for the second Welsh war suggests that there was a lack of destriers in England at this time.[111] This is not to say they were not used at all on this campaign: the inventories record only those horses belonging to men in receipt of royal pay, so lords such as Henry Lacy,

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[108] Gough, pp, 168; 170; 215.

[109] Trokelow, pp. xxv-xxvii; TNA E101/99/20, m. 2. It is possible that William may have been related to Giles Toulouse, keeper of the royal horses outside the court.

[110] Taken from Gough, pp. 160-237.

[111] For the inventories raised in 1282 see TNA, C47/2/5; 6; 7.

Earl of Lincoln, who served as part of his feudal obligations in 1282 and would certainly have been mounted on the best of horses, would not appear in such records.[112] There are certainly some horses of high value in these inventories: Sir William Latimer is recorded as having an *equus* worth £33, and the knights Peter de Chauvent and Nicholas de Segrave each had an *equus* valued at £26.[113] It is unlikely that these were destriers but scribes were certainly concerned with making distinctions between horse types at this time – rounceys, which made up the greatest proportion of horses on the campaign, are clearly delineated. The explanation for the absence of destriers in these early inventories was more likely due to a chronic shortage in supply. This is supported by a statute raised in the same year by Edward I to address the lack of 'great and competent warhorses' by ordering all holders of over 30 librates of land to keep one at the ready.[114] Although the statute does not specifically mention destriers, it was likely these types of horses were being alluded to.

It is not until 1298 that destriers begin to feature in the inventories. Chauvent is listed as having a tawny destrier and whilst Latimer served without pay on this expedition, his son (also William) rode destriers whilst serving in Scotland and Gascony in 1307 and 1324.[115] However, the consistently low proportion of destriers to other horses in the inventories does indicate that they were never present in great numbers. Retinues rarely fielded more than one, or at the most two, destriers in their contingents. The percentage of destriers in 1298 was only 2.8 percent, and the figures rarely rise above this. It is tempting to interpret the slight

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[112] Morris, pp. 57; 61. For evidence of the king's destriers stationed at Chester on the Welsh borders see E101/97/3, m. 4 (dorse).
[113] TNA, C47/2/7, mm. 4; 6.
[114] *Parl. Writs*, I, p. 226. 'Magnis [e]t competentib[u]s equis ad arma'.
[115] TNA, E101/14/15, m. 9; BL, Additional MS 26891, fol. 61ʳ.

increase of destriers on campaign between 1311 and 1314 as an indication that these horses were becoming more available – perhaps due to efforts to breed them – but the numbers may be inflated due to the nature of the source material. There are no surviving main inventories for Scottish expeditions under Edward II, and instead we must rely on figures compiled from a mixture of individual retinues under the leadership of wealthy men such as Sir Robert Clifford. Clifford was certainly able to raise knights that were well-horsed: in 1311 he was able to assemble 56 men for a raid at *Faringley* on the Scottish borders – 15 of whom were knights mounted on destriers with a mean value of £26. These elite mounts may have been somewhat lower in value than the destriers that appear in the king's household in 1298, but they are still an impressive array of horseflesh.[116] However, such high numbers of destriers reflect the personal wealth of a handful of prominent individuals rather than the wider sub-strata of retinues that made up the main armies.[117] If we take note of the much-reduced percentage of destriers used in Gascony in 1324 (for which we do have a substantial horse inventory) we see a return to normal figures. The actual percentage of destriers used on campaigns throughout the reigns of Edward I and Edward II averages 2.3 per cent, a figure that reflected that these types of horses were the preserve of only the wealthiest of men.

What made destriers so valuable? One of the main reasons was that they were trained for combat. Indications that destriers received a special level of management is alluded to in thirteenth-century Welsh laws.[118] These stated that

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[116] TNA, E101/14/15, m. 3. 'Faringley' may be Farlam, near Carlisle. This may have formerly been *fearn-leah-ham, 'fern-clearing + estate', implying a lost *Fernley/Farnley, or perhaps Faringley: *The Concise Oxford Dictionary of English Place Names*, ed. by Eilert Ekwall, 4th edn. (Oxford: Oxford Clarendon Press, 1960), p. 174.

[117] Ayton reaches a similar conclusion in his investigation of retinues under Aymer Valence, Earl of Pembroke, see Ayton, pp. 200-01.

[118] Edgar Ropa, 'The Horse in Welsh and Anglo-Saxon Law', in *The Horse in Premodern Culture*, ed. by Anastasija Ropa and Timothy Dawson (Berlin: De Gruyter, 2019), pp. 205-18

destriers had to be 'stall-fed 'for at least six weeks or they would lose their status.[119]

'Stall-fed' implies keeping horses stabled so they could be fed additional feed (which

in the Middle Ages usually comprised oats), and the implication here is that destriers

were expected to undergo intense periods of exercise that demanded extra calories.

Combat training would certainly have required horses to be kept close at hand and

well-fed. Destriers may have been unique in that they were considered specialist

mounts for all types of mounted fighting, and as such they are probably best

described as combat horses rather than simply warhorses. Evidence of this can be

found in the letter accompanying nineteen destriers purchased by Edward II in 1315.

It stated that these horses had been purchased specifically 'for a tournament at Wark

and the war in Scotland', and this implies that they were highly trained for combat

both on and off the battlefield.[120] Whilst the requirements of the tournament and

battle might be similar – after all, both demanded horses that were habituated to

carrying men with weapons – it can be argued that destriers were considered to be

specialists in mounted fighting. Further evidence of their use as specialist combat

horses is scattered throughout the Wardrobe books of Edward I: in 1275 Edward I

sent one of his own destriers to the knight William Rochechouard to ride in a duel

held in Limoges; some years later the king gave his nephew John of Brittany two

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(p. 206). In Welsh texts, a destrier was referred to as an 'amws' (stallion), but as Ropa points out, Latin versions of the laws translated this as 'dextrarius', so they were seen as comparable to English warhorses. Contemporary Welsh seals depict armed riders on horses very similar to the horses on English seals, see M.P. Siddons, 'Welsh Equestrian Seals', *National Library of Wales Journal,* 23 (1984), 292-318. For English seals see William Hamilton, *The Great Seals of England, from William the Conqueror to Edward II, Accurately Taken from the Original Impressions*, 1739, print, British Museum, London, <https://www.britishmuseum.org> [accessed 19 May 2023].
[119] Dafydd Jenkins, 'The Horse in Welsh Law Texts', in *The Horse in Celtic Culture: Medieval Welsh Perspectives,* ed. by Sioned Davies and Nerys Ann Jones (Cardiff: University of Wales Press, 1997), pp. 64-81 (pp. 71-72). Edgar Ropa, p. 209. For reports of Llewelyn's force of three hundred horse see Prestwich, *Edward I*, p. 180.
[120] Trokelow, p. xxvii. 'Contra torniamentum de Werks et guerram Scotiae'. There are two Werks, or Wark, in Northumberland, but the tournament was most likely due to be held near or close to the castle at Wark-on-Tweed.

destriers to ride in tournaments at Bedford and Kingston, and the following year sent

John another pair to ride in a tournament in France.[121]

High levels of training will have contributed to the value of destriers, but

when it came to musters, appraisers would have found it difficult to incorporate such

a non-tangible factor into their horse classifications and values. Instead, they must

have based their decisions on whether a horse was a destrier on other

characteristics such as its conformation. Destriers could be recognised by sight even

by the untrained eye and this is evident in the writings of William FitzStephen (d.

1191), one of Thomas Becket's clerks. FitzStephen wrote an account of visiting a

horse fair held at London's Smithfield market and he was easily able to distinguish

destriers from ordinary horses. He described them in admiring tones, describing

them as having an 'elegant form, noble stature, quivering ears, erect necks [and]

stout haunches'.[122] The physical structure of these destriers corresponded to the

hippiatric ideal of the noble horse. The author of the *Practica equorum*, an

anonymous treatise produced in England in the thirteenth century, drew on writers

such as Isidore of Seville (560-636) and Albertus Magnus (*c.* 1200-1280) to explain

how the *generosus equus*, or noble-blooded horse, could be recognised by its virtue,

form, and colour.[123] That the warhorse is the focus of the guide is made clear in the

list of desired virtues: it must be bold and 'not reluctant to go into the enemy or

against fierce horses'.[124] Form, or the conformation (shape and structure) of the ideal

horse is described as follows:

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[121] *CPR*, Edward I, 1272-1281, pp. 94; 100; Byerly, I (1977), p. 22; II, p. 43.
[122] William FitzStephen, *Material for the History of Thomas Becket: Archbishop of Canterbury (Canonised by Pope Alexander III., A.D. 1173)*, ed. by James Craigie Robertson, 7 vols (London: Longman 1875-85), III (1877), p. 6. 'Elegantis formae, staturae honestae, micantes auribus, cervicibus arduis, clunibus obesis'.
[123] *Practica equorum*, fol. 20ᵛ; Isidore of Seville*, pp. 248-249; Albertus Magnus, pp. 1378-79.
[124] *Practica equorum*, fol. 20ᵛ. 'N[on] recalcitrabit ire i[n] hostes [e]t cont[ra] equos feroces'.

'The well-arranged horse's form expresses its beauty. For form is considered to be a strong and robust body, its size and height corresponding to its strength, long flanks somewhat tucked up, large, well-rounded buttocks, a broad chest, feet firm and hollow and solidified by horn around all sides and fixed firmly on the ground, it should have a small and firm head, the skin adhering closely, short and pointed ears, large eyes, wide nostrils, an erect neck, the mane thick, the tail hair medium long and thick. Pay heed to the three long, three short, and three wide parts in the well-bred horse, a long head, long neck, long belly. Short ears, short fetlocks, short spine, wide rump, wide head and wide shins'.[125]

Similar descriptions of the conformation of the ideal horse can also be found in the works of other hippiatric authors such as Jordanus Rufus and highlight the importance of physical strength and bodily proportion.[126] The role of the destrier as a tournament and warhorse meant it needed to be able to move athletically whilst carrying around 150 kg of weight - this included its harness, mail covering, and a fully-armoured knight carrying weapons.[127] If a rider was routing the enemy or was engaged in combat he relied on his horse to accelerate and turn in any direction with power and speed. In a cavalry charge a horse also had to be able to swiftly change direction if needed: at Falkirk, the chronicler Walter of Guisborough recounted how

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[125] *Practica equorum*, fol. 20ᵛ. 'Forma u[ti] bone disponsis eq[ui] pulchritudi[n]em delcarat. Nam forma [con]siderat[a] ut h[ab]eat corp[us] validu[m] et robustu[m] magnitudi[n]em et altitudi[n]em suo robori respond[e]nte[m] latus longu[m] succinctu[m] aliqu[a]ntulu[m] maximos clunes p[ec]tus amplu[m] pedes siccos et [con]cavos cornu solidatos et undi[que] i[n] t[er]ra de fixa solidatate rotundos ut sit cap[u]t exiguu[m] et siccum pelle p[ro]pe adherente aures breves et acute occuli magni nares patule cervix electa coma densa cauda medio cr[ina] longa at[que] spissa Ite[m] attende in gen[er]oso equo t[ri][a longa at[que] t[ri]a curta et t[ri]a plata longu[m] caput longu[m] collu[m] longu[m] ventru[m]. Curtas aures curtas juncturas pedis curtam spinam platam c[ro]pam, platu[m] caput et platas tibias'. The use of 'electa' rather than 'erecta' is a scribal error.

[126] For example, see Jordanus Rufus, p. 1; Llull, pp. 17-18; Laurentius Rusius, pp. 8: 10.

[127] David Jones and Emma Herbert-Davies, 'Evaluation of Mail Horse-Armour', *EXARC* (2022), 1-8 (p. 3), DOI: https://exarc.net/ark:/88735/10624.

Scottish infantry held their ground under the onslaught of Edward's cavalry.[128] This meant that to avoid running their horses onto the Scottish spears, the troops would have had to sharply wheel their horses around at the last moment so they could regroup for another charge. The athleticism required of such horses can only be achieved by bringing a horse into collection. This consists of training a horse to shift its centre of gravity to its hindquarters so it can adopt a 'fighting stance'.[129] The short back, large haunches, and short fetlocks (ankles) that were considered desirable characteristics would help the horse to both bear weight and collect, and this suggests that hippiatric authors understood that certain conformational traits enhanced a horse's performance. Equally, certain features were to be avoided: Jordanus warned that a thick neck or excessive downward curve of the spine would make a horse difficult to ride, and that thick hair on the legs and fetlocks would make it suitable for hard labour but render it less agile.[130] Modern horses that have an abundance of hair on their legs (this characteristic is referred to today as 'feathers' or 'feathered') are commonly associated with heavy-boned draught horses such as Shires, so Jordanus was making a point about the preference for horses with light builds.

The hippiatric ideal presented a model of equine power, agility, and strength, but what evidence is there for horses of this description in other sources? Manuscript illuminations provide many images of horses, and these can be analysed to see whether they correspond to the ideals described by authors like Jordanus. Almost all images of horses in battle depict the kind of warhorses ridden by the aristocratic elite so they are more representative of destriers than the other types of horses taken to

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[128] Reproduced in Gough, pp. xxx.
[129] Gassmann, pp. 66; 69-70.
[130] Jordanus Rufus, p. 114.

war. For an example of a manuscript produced in the reign of Edward II we can turn to the beautifully illustrated Queen Mary Psalter which was made *c.* 1310-1320 (Figure 2.3).

Figure 2.3: Battle scene, England, *c.* 1310. BL, Royal MS 2B VII, Queen Mary Psalter, fol. 56[r]

One image is of a battle scene that depicts mounted knights riding caparisoned horses. The artist has portrayed the horses as athletic and elegant animals with erect, arched necks and fine-boned legs. These are stylised portraits: the horses have been drawn with aggressive expressions to reflect the martial nature of their riders, so a certain amount of artistic license must be acknowledged. Despite this, the gracile horses depicted in the Queen Mary Psalter are typical of many of the illustrations of warhorses in medieval manuscripts and they bear a striking

resemblance to the descriptions of noble hippiatric horses.[131] This consistency of portraiture suggests that destriers were lighter framed than the heavy, Shire horses that Davis posited were needed to carry fully armoured knights into battle.[132]

The warhorses in the Queen Mary Psalter do not appear to be tall animals. If the image is examined closely, the knights' feet are thrust forward almost level with their horses' fetlocks. However, if the proportions of the knight in the foreground are measured and compared to the depth of the horse's body and the length of its legs, the horse would be at least 148 cm in height. A comparison can be made with the image of Sir Geoffrey Luttrell which appears in the Luttrell Psalter, a manuscript produced in England *c.* 1330 (Figure 2.4). This image depicts the knight accoutred for combat sitting astride a grey horse of imposing stature, although the horse still has the fine-boned legs of the mounts in the Queen Mary Psalter. At first glance, the Luttrell horse appears very tall, but Prestwich argued that the artist had little sense of proportion. For example, the knight's legs are disproportionately short for his body, and Prestwich pointed out that if the horse's height is compared to the two lady bystanders, it is probably around 153 cm.[133]

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[131] An excellent source of digitised manuscript images that contain hundreds of illustrations of warhorses can be found in the following online repository: *Manuscript Miniatures* (2010), <https://manuscriptminiatures.com> [accessed 19 May 2023].

[132] Similar images of these types of horses can also be found on the seals of Edward I and Edward II. For images of these seals see Hamilton.

[133] Prestwich, '"Big and Beautiful": Destriers in Edward I's Armies', in *Medieval Communities in Late Medieval England: Essays in Honour of Andrew Ayton,* p. 2.

Figure 2.4: Sir Geoffrey Luttrell, England, *c*. 1325. BL Add MS 42130, The Luttrell Psalter, fol. 202v.

The variation in the heights of the horses depicted in artistic images needs to be considered alongside other evidence. A team from the archaeology department at the University of Exeter adopted a zooarchaeological approach to the subject of warhorses.[134] They examined almost 2000 horse bones dating between AD 300 and 1650 and revealed some interesting information regarding the height of medieval horses. Their results indicated that during the late Middle Ages, most horses were around 133 cm in height, the equivalent of a small modern pony.[135] This led the team

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[134] 'Warhorse: The Archaeology of a Military Revolution?', <https://medievalwarhorse.exeter.ac.uk> [accessed 4 March 2024]. The project aims to conduct a systematic study of archaeological evidence for horses from medieval Britain.
[135] Ameen and others, 'In Search of the Great Horse: A Zooarchaeological Assessment of Horses from England (AD 300–1650)', p. 1250. The study also revealed a noticeable increase in the width of metatarsal bones between 1200 and 1350. This indicates a trend

to posit that warhorses were probably also the size of small ponies.[136] However, none of the bones that were examined could be proved to belong to warhorses. Most were found in urban waste pits, and it can be argued that these pits would have mostly contained the remains of ordinary working horses used in the transportation of goods. Small ponies would have been ideal for this type of work as they are cheaper to maintain than larger animals, their height makes them easy to load with packs, and they are capable of drawing carts. The study focused its conclusions on mean values and somewhat glossed over the evidence that some of the bones belonged to horses up to 163 cm.[137] This was only a small percentage of the total finds, but it is significant because it shows that there were taller horses in medieval England.

Michael Prestwich argued that Edward I's destriers must have been comparable in height with modern horses (over 148 cm) due to the amount of feed they consumed.[138] On royal studs destrier stallions were fed half a bushel of oats (around 6 kg) per day, a volume that Prestwich noted was comparable to the amount of hard feed given to cavalry horses in the early twentieth century. These cavalry horses were typically up to 163 cm in height, the size of an average modern horse. Feed ratios are properly discussed in Chapter Four of this thesis, but in summary, 6

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towards the production of horses with more robust hind legs, and it is suggested that horse morphology was changing in response to the requirement for warhorses with strong rear limbs – an attribute that would help horses to support the weight of their riders and to engage their hindquarters in collection. However, it is also noted that this change in hind leg robustness corresponds to the increased use of horses for agricultural purposes from *c.* 1200, meaning that the connection to warhorses is somewhat speculative.

[136] 'The Size of a (War) Horse', Warhorse: The Archaeology of a Military Revolution?', <https://medievalwarhorse.exeter.ac.uk> [accessed 4 March 2024]; Steven Morris, 'Medieval Warhorses No Larger than Modern Day Ponies, Study Finds', *The Guardian*, 10 January 2022, <https://www.theguardian.com> [accessed 12 March 2023].

[137] Ameen and others, 'In Search of the Great Horse: A Zooarchaeological Assessment of Horses from England (AD 300–1650)', p. 1250.

[138] Prestwich, '"Big and Beautiful": Destriers in Edward I's Armies', pp. 5-6.

kg of oats is a large volume of high-energy grain that by today's standard would be excessive for small ponies. The subject of warhorse height also came under scrutiny through the Universities' later investigation of the Warwick shaffron in the Royal Armouries.[139] The shaffron is a plate defence designed to protect a horse's head from weapons and the Warwick shaffron, believed to have been made *c*. 1400, is the earliest surviving European example of such armour. It is thought to have been owned by Richard Beauchamp, Earl of Warwick (1382–1439) who performed military service in Wales and France and was also an active participant in tournaments. An area of damage to the shaffron appears to have been made by a bodkin arrowhead and this would suggest that it had been used in battle.[140] Measurements of the shaffron indicate that it was designed to fit a horse of around 153 cm in height.[141] This contradicts the team's earlier assumption that warhorses were probably small ponies.

Documentary evidence supports the fact that taller horses were owned by the aristocracy. An examination of London's civic regulations reveals that in 1276 a royal order was issued stating that pentices (a corridor connecting two buildings, or a roof built over a ground floor window or door), jetties, and gutters must be a 'minimum of nine feet high (274 cm) above the ground so not to impede horsemen'. In 1297 this mandate was repeated, and a warning was added that 'pentices which are too low

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[139] Oliver Creighton, Alan Outram and Eleanor Wilkinson-Keys, 'New Light on the Warwick Shaffron: Understanding Horse and Shaffron Size Through the Collections of the Royal Armouries', *Arms & Armour* (2024), 1-24.

[140] Ian Eaves and Thom Richardson, 'The Warwick Shaffron', *The Journal of the Arms & Armour Society*, 12 (1987), 217-22 (p. 219). Eaves and Richardson argue that arrows were unlikely to have been used in tournaments.

[141] Creighton, Outram and Wilkinson-Keys, pp. 15-16.

shall be forthwith pulled down, that so persons may ride on great horses beneath'.[142]

Calculations of the head height of a mounted man give some perspective of the

height of these great horses. If the average height of a man *c.* 1400 was around 173

cm, then his seated height would be around 90 cm (from seat to the top of his

head).[143] If a 5 cm is allowed for the depth of the saddle then this increases to 95

cm. He would be able to ride a horse up to 160 cm beneath a pentice that conformed

to the regulatory height and even have 19 cm spare headroom to wear some form of

headgear. Pentice regulations were clearly catering to men riding horses, not men

mounted on small ponies. If this evidence is considered alongside the archaeological

evidence for horses up to 160 cm, and the large volume of oats fed to destriers, it

can be argued that warhorses were more than likely to have been taller than the

average medieval pony.

The Equus

Although the king's officials would have been keenly aware of the differences

between destriers and the other horses presented to them for appraisal, the horses

they classified as *equi* are somewhat more difficult to define. There is none of the

cultural richness of the destrier to help us work out the military definition of such

animals. A clue might lie in the common use of the term *equi* to describe horses in

general. It may be that this word was similarly employed in military terminology to

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[142] John Schofield, 'The Construction of Medieval and Tudor Houses in London', *Construction History*, 7 (1991), 3-28 (p. 17); 'Regulations for the safe-keeping of the Streets', 25 Edward I. A.D. 1297, Letter-Book B. fol. xxxiii, cited in *Memorials of London and London Life in the XIIIth, XIVth, and XVth Centuries,* ed. by Henry Thomas Riley (London: Longmans, Green and Co., 1868), p. 35.

[143] Gregori Galofré-Vilà, Andrew Hinde and Aravinda Guntupalli, 'Highs and Lows of an Englishman's Average Height over 2000 Years', *University of Oxford News and Events* (2017), <https://www.ox.ac.uk> [accessed 23 November 2023]; 'Anthropometry and Biomechanics' *NASA* (2024), Vol 1, Section 3', <https://msis.jsc.nasa.gov> [accessed 26 March 2023]. (2017).

describe any horse that was neither a destrier nor a rouncey but fell somewhere in the middle of these two categories. The *equi* that appear in army inventories made up just over 20 per cent of the horses taken on campaign by paid men-at-arms up to the early 1300s, and they were ridden almost exclusively by the knightly contingent. This was mainly due to their cost as *equi* were more affordable than the exorbitantly priced destriers. The inventories for the Scottish expedition in 1298 reveal that the mean value of an *equus* was £20, a figure that was significantly lower than the mean value of a destrier (£35). The minimum and maximum values of these horses are important to consider. Some of the lower price *equi* belong to men who held positions in the king's household but were not necessarily wealthy: Peter, the king's surgeon, and William Warin, an usher, are on £10 horses. Listed alongside Warin are Sir Roger de Leys and his sergeant John de Asheburne who have *equi* worth only £4 each.[144] In contrast, some *equi* had higher values than some destriers. The highest priced *equus* in the inventory was £66 and this is ridden by Sir John de Badeham, a knight serving in Hugh Despenser's retinue.[145] Highly-priced equi also appear in several other inventories: on the Flanders campaign a year earlier Sir Henry Leyburn junior and Sir Gilbert de Knovill were both mounted on *equi* worth £46, and Sir Aymer de Valence rode one valued at £60 in Scotland in 1300.[146] As with the disparity in destrier values, the horses' ages and general condition must have influenced the appraisers' judgement of their worth.

Although it is possible that the occasional scribal error meant that some of the horses listed in the inventories were incorrectly recorded as a particular type, in general, great care was taken to ensure that each horse was correctly identified. For

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[144] Gough, pp. 162; 175.
[145] Gough, p. 187.
[146] Gough, p. 187; TNA, E101/6/37, mm. 6; 4; E101/9/24, m. 1.

example, in 1301 one scribe listed a horse belonging to Sir Walter Beauchamp as an *equus* before striking out the term and replacing it with *dextrarius*, and a similar amendment can be found applied to Sir Thomas Richmond's horse which was valued in Scotland several years later.[147] Such amendments point to the intervention of the knights who owned the horses as it was of great importance that their mounts were correctly identified and valued. One can only imagine some of the conversations between men-at-arms and appraisers when it came to recording such details. When Sir George Thorpe brought forward his mount for valuation it was originally listed as a destrier, but on reflection, the appraisers amended this to *equus*, perhaps not without some debate as to the horse's correct typology.[148]

The occasional amendments to horse classifications suggest that there may have been little visual difference between the more expensive *equi* and their destrier counterparts. Those *equi* that fell into the more moderate price range were considered to be of a somewhat lesser quality, perhaps because they lacked the superior kind of conformation that made destriers so well-suited for combat manoeuvres. The considerable overlap in valuations between these two types of horses does raise the question why a would knight with a healthy budget choose to mount himself on an *equus* rather than a destrier? The answer is probably that destriers were never available in great numbers and those of lower value, such as the £13 destrier given to Bolton Priory in 1318 by Lady Margaret Neville, were likely to have been older horses or perhaps had defects such as old injuries.[149] A highly priced *equus*, on the other hand, was perhaps a safer investment as it would be a horse in its prime and more likely to survive the rigours of campaign.

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[147] TNA E101/9/24, m. 3; E101/14/15, m. 1.
[148] TNA E101/14/15, m. 9.
[149] Kershaw, *Bolton Priory: The Economy of a Northern Monastery 1286-1325*, p. 105.

The origin of many of the *equi* ridden by most knights is not made clear. The use of such generic terminology may simply indicate that they were a compound mixture of horse types, albeit ones of exceptional quality with the strength, stamina, and training for warfare. It is not beyond the realms of possibility that some were the progeny of destriers crossed with local mares or were perhaps coursers. The latter appear in the stables of Edward I and were considered important enough to be given names such as Liard Chaundos and Morel Westminster.[150] Coursers begin to appear as a separate horse classification in the inventories of Edward III and are valued somewhere between destriers and *equi*. For example, the retinue raised by Sir John Molyns in the late 1330s included coursers that ranged in price from £25 to £50 – lower than Molyns' own £100 destrier, but higher in value than the *equi* that made up the rest of his men-at-arms' horses.[151] It is not inconceivable that some of the higher priced *equi* in the armies of Edward I and Edward II were also coursers – Leyburn's and Knovill's *equi* certainly fell into the price range of coursers under Edward III. This may reflect the fact that military horse terminology was not static but changed over time. Nowhere was this more evident than the reclassification of the rouncey, the final type of horse found in the inventories of the period.

<u>The Rouncey</u>

The horse which appeared in the greatest numbers in Edward I's inventories was the *runcinus*, or rouncey. Their numbers reflect the fact that they were ridden by the *valletti*, or sergeants, men who made up three-quarters of men-at-arms in the inventories. Sergeants were below the rank of knight and their comparatively limited

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[150] TNA, E101/613/15.
[151] Ayton, p. 237.

financial resources meant that they are found almost exclusively on rounceys, horses that were generally of lower value than a destrier or *equus.*[152] The term rouncey comes from the Old French *roncin*, meaning a work horse, and it appears as early as the Domesday Book, where the term appeared to denote 'a horse of unexceptional quality' prevalent on the farms and holdings of England.[153] Albertus Magnus followed suit, describing them as agricultural workhorses used 'for carrying burdens or pulling four-wheel carts and ploughs'.[154]

In English household accounts rounceys can be more correctly described as all-purpose animals that were used for a variety of roles. In the Wardrobe records of 1285-1286, rounceys were purchased both as beasts of burden and occasionally as riding mounts for members of the royal household: one was purchased for use as a packhorse for 20s.; another was bought for £6 8s. to carry the king's arms; a rouncey bought as a mount for the queen's steward cost £3.[155] Whether the rounceys in such accounts can be said to be comparable to those used on military expeditions is debatable. The mean value of rounceys mustered at Falkirk is £8, somewhat higher than those purchased for the royal household, but their inflated prices may well reflect that these animals had been specially trained for warfare - all horses ridden by paid troops would have received some form of practical training with weapons so their riders could perform effectively in battle. Evidence of rounceys being bred by men who performed armed service can be found in the accounts of Henry de Lacy,

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[152] Simpkin, p. 92. Occasionally more impoverished knights can be found riding rounceys. For example, Sir Laurence de Hameldene in the 1298 campaign in Scotland (Gough*,* p. 192).

[153] 'Roncin', in *Dictionnaire du Moyen Français (1330-1500)*; Kerry Cathers, 'An Examination of the Horse in Anglo-Saxon England' (unpublished doctoral thesis, University of Reading, 2002), pp. 366-68.

[154] Albertus Magnus, p. 1378. 'Runcini autem sunt qui habentur ad labores onerum vel tractus quadrigarum et redarum.'

[155] Byerly, I (1977), pp. 54; 58.

Earl of Lincoln, in 1304-1305: on his stud farm at Ightenhill (now Higham) in Lancashire there were 19 rounceys, 7 of which originated from Lacy's estate in Denbigh, Wales, and 17 of these horses were sold on for between £4 and £5 each.[156] At these prices, they might well have been purposefully bred as military rounceys.

An analysis of the price ranges of rounceys in the 1298 army inventories reveals that they ranged from around £5 to as high as £20, although there are some notable exceptions: three men-at-arms from the county of Yorkshire only had the financial resources to bring rounceys worth 40s. on the campaign.[157] Although valuations were no doubt influenced by the age and condition of the horse brought forward for appraisal, the lower-priced rounceys may well have been indistinguishable from those used outside of the military. In a list of soldiers' horses valued *c.* 1314 the £3 rouncey belonging to Radulphus de Radhampshire is struck out and a note added that it had been reappropriated as a packhorse for his *socius* Richard de Waldeston.[158] Presumably, Radhampshire had died, but the immediate reuse of his horse as a baggage animal suggests that military rounceys were as versatile as those found in household accounts, and were therefore probably of a similar ilk. What set them apart from ordinary rounceys was the additional training they will have needed to carry men-at-arms into battle.

A clue to the morphology of rounceys can be found in the order raised by Edward III in 1327 on the eve of the Weardale campaign. Troops were told to bring 'fast, strong, and hardy rounceys to ride and pursue the enemy', implying that these

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[156] *Two "Compoti" of the Lancashire and Cheshire Manors of Henry de Lacy, Earl of Lincoln, xxiv and xxxii, Edward I,* ed. by P. A. Lyons (Manchester: Chetham Society, 1884), p. 173.
[157] Gough, p. 207.
[158] TNA E101/14/15, m. 9 (dorse). Ayton suggests that 'socius' indicated a man of equal rank, see Ayton, p. 54, fn. 22.

horses were sturdy and robust animals, capable of navigating the difficult Scottish terrain.[159] Their ability to remain surefooted over rugged ground and their alternative use as pack animals suggest that rounceys were no bigger than modern ponies. They may have therefore averaged 133 cm in height, a supposition that is consistent with the results of the mean height of horses in archaeological remains.[160] Some may have been smaller – a *runcinettus*, or small rouncey, belonging to one of the king's sergeants-at-arms, Audoenus Gogh, appears in an inventory raised for the prince's household in 1306.[161] The fact that the official appraising the horse thought its size was worthy of mention could indicate that rounceys (and perhaps also destriers and *equi*) were generally viewed as corresponding to a certain size. Gogh's rouncey was valued at only £4 – was this low price partly reflective of its diminutive stature? If so, the more expensive rounceys, such as the £20 rouncey belonging to Baldewynus Bruyn', may not only have corresponded to the 'fast, strong, and hardy' rounceys desired by Edward III, but also been considered particularly large for their type.[162]

From 1300 the number of rounceys in the inventories begins to fall dramatically: of the 480 horses appreciated for the 1301 expedition to Scotland only 9 are recorded as rounceys, and in 1303 only 10 can be found amongst the 513 horses listed in in the king's household.[163] By the 1310s rounceys had all but disappeared from the lists of horses appraised for campaigns. There were still a few

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[159] *Rotuli Scotiae in Turri Londensi et in Domo Capitulari Westmonasteriensi Asservati,* ed. by W. Illingsworth, J. Caley and D. Macpherson, 2 vols (London: G. Eyre and A. Strahan, 1814-1819), 1 (1814), p. 208. 'Runcinos veloces fortes et asp[er]os ad equitand[um] et p[er]sequend[um] d[ic]tos inimicos'.
[160] Ameen and others, 'In Search of the Great Horse: A Zooarchaeological Assessment of Horses from England (AD 300–1650)', p. 1250.
[161] TNA, E101/14/15, m. 9.
[162] Gough, pp. 66; 232.
[163] TNA, E101/9/24; E101/612/11.

to be found in a handful of Scottish garrison inventories in 1311: one list of appraised horses accounts for 24 sergeants, all of whom are mounted on rounceys; another comprises the names of 15 men, 11 of whom are also recorded as riding this type of horse.[164] These small retinues were probably formed as raiding or scouting parties but by this time the inclusion of rounceys in the inventories had become the exception rather than the rule.

In the horse lists from the 1310s onwards all horses not classified as destriers are now listed simply as *equi*. Does this indicate that rounceys were no longer used by the army, or was this simply a change in military terminology? It seems unlikely that the horse type that had made up three-quarters of men-at-arms' mounts in the 1280s should now be made redundant. Ayton's analysis of warhorse values between 1282 and 1324 shows that although there was an overall increase in prices under Edward II this was confined to a growing number of highly-priced horses, rather than an increase in the middle range where *equi* would have appeared.[165] If the *equi* listed in inventories raised in 1311 are examined, 7 per cent of have values under £5, a low figure that is more commonly associated with the cheapest rounceys rather than *equi*.[166] The decision to change the terminology used by the king's appraisers may have been generated by a desire to simplify the appraisal process. By listing all horses that did not qualify as destriers under the umbrella term *equi*, there was less opportunity for divisive opinions on what type of horse was being presented. That this may have occasionally happened is eluded to in the Falkirk inventory, in which two horses are both listed as *runcinus equus* possibly due to arguments over exactly

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[164] TNA, E101/14/15, mm. 6; 9 (dorse).
[165] Ayton, p. 196.
[166] Bain, III (1887), pp. 413-32.

how they should be classified.[167] There are also hints that the military delineation between rounceys and *equi* was confusing to administrative clerks: in 1300 James de Molendis is recorded as handing over his wounded rouncey to the caravan train, but another clerk later lists the same horse as an *equus*.[168] The *equi* found in the inventories of Edward II were therefore likely to have been similar to the *equi* and rounceys in earlier inventories, regardless of changes in terminology.

Colour

The inventories also provide a rich resource for learning about the different colours of horses in the thirteenth and fourteenth centuries. This is important as it offers information on the visual appearance of medieval horses and provides documentary evidence of their range of colours and markings. Literary references to horse colouring can be found in *chansons de gestes* and chivalric romances of the period. In Chrétien de Troyes' *Perceval* and its continuations the knight Perceval rides a white horse and the destrier belonging to King Ris is named White Lion-Cub; in the thirteenth century *Queste del Saint Graal* Sir Galahad and his knights are also depicted on white horses.[169] The popularity of pale-coloured horses in literature is borne out in many manuscript illuminations. For example, the warhorses depicted in the Queen Mary Psalter and other contemporary manuscripts are frequently covered

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[167] Gough, p. 231.

[168] Topham, pp. 84; 171.

[169] Chrétien de Troyes, *The Complete Story of the Grail: Chrétien de Troyes' Perceval and Its Continuations*, trans. by Nigel Bryant (Cambridge: D.S. Brewer, 2015), pp. 144; 146; 531; Ropa, 'The Price and Value of the Warhorse in Late Medieval England', p. 225. For a discussion on the prominence of light-coloured horses in *Perceval* see Ropa, *Practical Horsemanship in Medieval Arthurian Romance,* pp. 27-31.

in caparisons, but it is clear from their legs and faces that these horses were white or pale coloured.[170]

Although literary and artistic representations can indicate preferences for light-coloured horses, the inventories provide an important source of information on the reality of warhorse colours. The recording of the colour of each horse formed an important part of the appraisal process as it was used as the main means of identifying individual animals. This was fundamental to the whole *restaurum equorum* process as claims for lost horses had to be verified before payment could be approved. When a claim was brought forward the horse's description was given and the clerks in charge of the corresponding inventory matched this against the original entry.

Without such a process in place, it would have been extremely difficult to detect fraudulent claims. The officials appointed to appraise the horses therefore took considerable pains to describe their colours as accurately as possible and did this using a specialized vocabulary to describe the wide variety of solid, patterned, and mixed coats of the horses brought before them. These lexemes were unique to horses and were incorporated into the names of elite mounts. These horses had binomial names made up of their colour and either their place of origin or the name of the person who had gifted or bred them. For example, amongst Edward I's personal stock of horses are Morel Woodstock, a black-brown stallion bred at Woodstock stud, and Sorel Chaundos, a chestnut possibly given to the king by the Derbyshire knight, Sir Edward Chaundos.[171] Before analysing these different colour lexemes it is first necessary to acknowledge the difficulties of applying modern colour

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[170] BL, Royal MS 2B VII, Queen Mary Psalter. Also see Oxford, Bodleian Library, Christ Church MS 92, Liber de Nobilitatibus, Sapientiis et Prudentiis Regum.
[171] TNA, E101/613/15.

terminology to medieval lexemes. This was addressed by Michael J. Huxtable, who

adopted a phenomenological and linguistic approach to his study of colour concepts

in medieval literature. Huxtable acknowledged the problems of addressing the

subject of colour, explaining that its perception and meaning varied widely depending

on time and context and that any analysis is not only limited by modern perception

but also relies on 'utilizing words that we identify and use in colour concepts

ourselves'.[172] This is particularly applicable to the study of horse colours, many of

which are further complicated by compounds that are difficult to correlate with

modern horse colour terminology.

In addition to trying to understand medieval perceptions of colour from a

modern viewpoint, it must also be borne in mind that the officials employed to

appraise horses were judging colours from a personal and therefore highly

subjective viewpoint. On some occasions there appeared to have been

disagreements over the correct colour terms to use: the clerk who listed Henry de

Mundville's destrier as 'tawny bay pied' may well have been accommodating two

different opinions on the shade of its brown markings.[173] Analysing medieval equine

colours is fraught with difficulties. Bearing this in mind, this section will offer a

necessarily tentative yet probably not altogether misleading overview of horse

colours in the inventories.[174]

Before the vocabulary of horse colours is addressed it is first necessary to put

it into context by providing an overview of the language of horse colours in early

texts and hippiatric treatises. Palladius, a fifth-century agronomist, used nineteen

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[172] M. J. Huxtable, 'Colour, Seeing, and Seeing Colour in Medieval Literature' (unpublished doctoral thesis, University of Durham, 2008), p. 10; Reiner Geurts, *Hair Colour in the Horse*, trans. by Anthony Dent (London: J. A. Allen, 1977), p. 22.
[173] Bain, III (1887), p. 413.
[174] See Appendix 1.

words to describe the different pigments of horses' coats. Amongst these were terms illustrative of saturation, shininess, and dappling, such as *obscurius* (dark or dusky) and *spumeus* (frothy or foaming).[175] Isidore of Seville expanded on Palladius's text by offering explanations for some of these words. He explained that a white horse could be described as *albus* (flat white); *canus* (greyish white); *glaucus* (bright white); or *candidus* (snow white), depending on the colour's intensity and light absorbing qualities.[176] The attention to variants in colour is important to note as this was still evident in hippiatric treatises and to some extent, the inventories. For example, the hippiatric author Jordanus Rufus praised horses that were either bay or *semialbus et obscurus.*[177] The latter translates literally as half-white and dusky, a puzzling description that may correspond to a coat that contained an even mixture of black and white hairs. The idea that some horse colours were better than others was not new. Isidore placed colour into a hierarchy of desirability: *badius*, or bay, was said to be highly preferable as it indicated that the horse could run more strongly than other animals; least favoured were the colours *dosinus* (dun) and *cinerus* (ash grey). These were said to be the same colours as the ass and *equiferus*, or wild horse, and as such this made them unfit for urban use.[178] Albertus Magnus followed Isidore by reiterating that the natural colour of feral horses was *cinerus*, and pointed out that such horses could also be identified by their dorsal stripes (a dark line running along a horse's back from head to tail). According to Albertus, the colour of domesticated horses, and therefore noble mounts, was only black, red, or white, or

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[175] *Palladii Rutilii Tauri Aemiliani viri inlustris Opus agriculturae de veterinaria medicina de insitione*, trans. by Robert H Rodgers (Leipzig: Teubner, 1979), p. 136.
[176] Isidore of Seville, p. 249.
[177] Jordanus Rufus, p. 18.
[178] Isidore of Seville, p. 249.

sometimes 'grey with black coats intermixed with small white circles'.[179] This latter

colour perhaps corresponds to the *spumeus* of Palladius and the modern term

dapple grey.

Hippiatric authors drew much of their descriptions of the noble horse from

these earlier authors. Colour was considered one of the important features of a

horse in addition to its form and virtue, and this also pertained to the breeding of

horses. Laurentius Rusius drew on Palladius in offering advice on choosing the right

coloured stallion to use at stud, stating that their coats should be 'bright and of one

colour: the others are indeed to be despised'.[180] Laurentius offered no explanation

why coats of a single colour were preferred, but a clue might be found in Aristotle's

De Coloribus. In this treatise the Greek philosopher described the hair of animals as

being primarily white, grey, red and black, but when these colours were mixed it was

said to create unevenness in the dry and moist qualities of the body.[181] Hippiatric

writers recognised the importance of balancing dryness and moistness in horses,

particularly when breeding, as an excess or deficiency of either could impair the

ability to procreate or reduce the quality of semen.[182]

Although colour was considered by Laurentius to be an important feature

when choosing horses, particularly breeding stock, other hippiatric authors appeared

reluctant to engage with the subject. In contrast to Laurentius, Jordanus limited his

observations to stating that bay and greyish were preferable and concluded that

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[179] Albertus Magnus, p. 1378: 'Grisei, qui quasi circulis parvis interpositis nigros albis immixtos habent pilos'.

[180] Laurentius Rusius, p. 10. 'In admissariis praecipue legamus clari et unius coloris: ceteri uero despiciendi'.

[181] *'De coloribus', Aristotle: Minor Works I, Loeb Classical Library*, trans. by W. S. Hett (London: Heinemann, 1936), p. 37; Richard Sorabji, 'Aristotle, Mathematics, and Colour', *The Classical Quarterly*, 22 (1972), 293-308 (p. 297).

[182] Harrison, 'Jordanus Rufus and the Late-Medieval Hippiatric Tradition: Animal-Care Practitioners and the Horse', p. 166.

'different people feel differently' about horse colours.[183] His reluctance to comment further may reflect that there was a divergence of opinion between these earlier authors and contemporary hippiatric tradition. This is most clearly illustrated in the *Practica equorum*, in which the author began by echoing Jordanus's statement that 'in choosing horses there are different opinions about colours' but went on to argue that some of the ancient writers were incorrect in their assumption that ass-coloured horses should be rejected based on their colour.[184] This was aimed at Isidore's and Albertus Magnus's condemnation of yellow-dun or greyish-coloured horses. In his defence, the author of the *Practica equorum* drew from personal experience, stating that he had 'seen many virtuous horses of this colour', but somewhat ironically added that in his opinion *pomelatius,* or dapple grey, was to be praised.[185]

Descriptions of horse colours in the inventories provide evidence of a wide variety of warhorse colours. An analysis of the vocabulary in the inventories reveals that there were fourteen main colours: *albus* (white); *badius* (bay), *baucan* (pied), *doyne* (dun), *favum* (tawny), *grisum* (grey), *liardus* (roan), *morellus* (black-brown)*, niger* (black)*, piole* (flea-bitten grey), *powys* (uncertain), *sorus* (sorrel or chestnut), and *varius* (variegated). These words could be monolexemic, for example, a white horse could simply be termed *albus*.[186] More often, these main colours were combined or suffixed (or prefixed, according to scribal preference) with an adjective to describe subtle differences in the main colours' hues or levels of saturation or to

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[183] Jordanus Rufus, p. 18. 'Quia diversi diversa sentient'.
[184] The ass is typically a greyish or yellowish colour with a dorsal stripe.
[185] *Practica equorum*, fol. 20ᵛ. 'Ego eidem coloris plures vidi v[ir]tuosos'.
[186] Today, white horses are usually termed 'grey' as beneath their coats they have black skin (a truly 'white' horse will have pink skin and is called an albino). There is no evidence that this tradition was followed during the Middle Ages, so for the purpose of this thesis (and to avoid confusing those not familiar with modern equine vocabulary) a white horse is deemed to have a white coat and black skin, and grey horses a grey-coloured coat. There may have been albino horses during this period, but if so, they are not separately identified.

draw attention to the number of white hairs in the coat. Thus, a bright bay horse appears in the records as *clarus badius,* and a steel-grey horse as *ferrandus*, but if the latter had an obvious mixture of white hairs dispersed throughout its coat the compound *ferrandus albus* (greyish white) would be deemed more appropriate. *Pomele* is very occasionally used as a monolexeme but is mostly used as an adjective to describe dappling or patterns of round areas of lighter or darker shades of hair in a horse's coat. For example, in the 1298 inventories, there are 315 attestations of *pomele* affixed to other colour lexemes (mostly to *ferrandum* to denote a dark, dapple-grey horse) but only a single instance of it being used alone.[187]

Although some of the colour vocabulary used in the inventories to describe horses appears relatively straightforward to translate, other terms are more difficult to define. *Baucan* and *powys* are two such examples and deserve revised explanations. The former is a loan word derived from *baucenc* (Old French) and *balzanus* (Italian) and is used to describe a pied horse (one with a black or brown base coat overlaid with irregular white patches).[188] Charles Gladitz interpreted *baucan* as piebald (black and white) and went on to suggest that *piole* denoted a skewbald (brown and white).[189] However, pied horses were usually identified by using *baucan* as a compound word. Hence the term is attached to other colour words such as *niger*, *sorrus, favus, doyn,* and *badius* (black, red, fallow, dun, and bay) to indicate the various shades of black and brown base coats. The etymology of the term *piole* comes from Old French *piolé* meaning freckled or speckled, suggesting that these horses had small flecks of a secondary colour interspersed

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[187] Gough, p. 163. This horse was simply described as an 'equum pomele'.
[188] 'Baucan', *Logeion*, *Latin and Greek Dictionary*.
[189] Gladitz, Appendix G, pp. 238-39. This error means that Gladitz's analysis of the frequency of pied-coloured horses is incorrect.

throughout the base coat. As a monolexemic word, it may have denoted flea-bitten grey, a white coat with brown freckles.

Another term that has proved ambiguous is *powys*. Charles Gladitz assumed that it indicated a horse which owed its origins to Powys, Wales.[190] This is somewhat anomalous, as without exception every other horse in the inventories is described by its colour, not a location. The idea that Powys horses were significant appears to be based on a sole reference by the Welsh chronicler Giraldus Cambrensis (d. *c.* 1223). He praised the studs of Powys, describing the horses there as being of 'noble appearance, with majestic limbs and extraordinarily swift'.[191] However, there is little evidence to support Giraldus's statement: there are no references to the importance of horses from Powys in Welsh or English administrative documents, nor do they feature in contemporary literature or poetry. Gladitz went on to suggest that *powys* became absorbed into the lexicon of equine colours as horses from the region shared the commonality of yellow dun coats due to being crossed with wild Welsh mares. The author provided no evidence to support this save for a reference to Albertus Magnus who equated feral horses with the colour *cinerus*. This is a mistake on Gladitz's part as *cinerus* is ash-coloured, not yellow-dun. Gladitz's argument is further weakened by his statement that horses listed in the army inventories as *powys* are generally of low value as their feral lineage meant they were of a 'substandard' quality. This is unfounded: amongst the horses in the retinue of Sir Robert Clifford at Carlisle in 1311 is a *powys* destrier valued at £26, and in 1298 the

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[190] Gladitz, p. 163.
[191] Gerald of Wales, *Giraldi Cambrensis Opera*, ed. by J. S. Brewer, J. F. Dimock and G. F. Warner, 8 vols, Rolls Series, 21 (London: Longman, Green, Reader and Dyer, 1861-91), II (1868), Book II, Chapter XII, p. 143. 'Cum nobili formae picture […] tam membrosa sui majestante, quam incomparabili velocitate'.

powys horse ridden by Edward I's keeper of the Wardrobe, John Drokensford, was

priced at £20.[192]

  To find a more convincing connection between the term *powys* and a horse

colour we must go back to the 1940s. Nellie Neilson investigated a handful of

Edward III's *equitium regis* accounts and translated *powys* meaning a horse with a

puce (dark reddish brown) coat.[193] Frustratingly, Neilson does not explain her

supposition but there are two possible reasons for her translation: firstly, she may

have been drawing parallels with the Welsh form of puce, *piws,* and secondly,

Neilson may have been familiar with the manuscripts held in Worcester Cathedral

library.[194] Among these is *De utensilibus*, a work produced by the theologian

Alexander Neckham (d. 1217) which is notable for being heavily glossed in the

vernacular.[195] Some of Palladius's horse colour terms are included in Neckham's

work and the term *mirtheos* is glossed as *powis*.[196] Isidore offered explanations for

Palladius's horse colours and described *mirtheos,* or *myrteus* as 'subdued purple'.[197]

Its cognate in Old French and modern English is *myrtille*, or myrtle, a shrub that

produces berries that change from reddish brown to dark purple as they ripen –

hence the connection of *powis* with the colour puce.[198] A puce, or dark reddish-brown

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[192] TNA, E101/14/15, m. 3; Gough*, p. 174.

[193] Nellie Neilson, 'The Forests', in *The English Government at Work 1327-1336*, ed. by James F. Williard and William A. Morris, 3 vols (Cambridge, MA: The Medieval Academy of America, 1940-1950), I, (1940), pp. 393-467 (p. 439).

[194] Puce', *Gweiadur: The Welsh-English Dictionary* [online], <https://www.gweiadur.com>, [accessed 2 August 2023].

[195] Sometimes spelt Neckam or Nequam. On Neckham see R. W. Hunt, *The Schools and Cloister: The Life and Writings of Alexander Nequam, 1157-1217* (Oxford: Clarendon, 1984).

[196] Worcester, Worcester Cathedral Chapter Library, MS Q.50 De Utensilibus, fols 28^r-29^v, cited in Tony Hunt, *Teaching and Learning Latin in Thirteenth Century England*, 3 vols (Cambridge: D. S. Brewer, 1991), II, p. 62. Other horse colours are also glossed, for example 'badios' as bay and 'aurea' as 'sorrus', or sorrel.

[197] Isidore of Seville, p. 249.

[198] 'Myrtille', *Dictionnaire du Moyen Français (1330-1500)*. The term 'powis' in the Anglo-Norman Dictionary is also somewhat tentatively described as 'reddish, that resembles the myrtle-berry in colour', see Powis', *Anglo-Norman Dictionary* [online], <https://www.anglo-norman.net/entry/powis> [accessed 2 August 2023].

horse is today termed a 'liver chestnut', and as this colour does not appear to be easily explained by any other lexeme in the inventories, it seems a plausible explanation. What is clear is that *powys* was not used to describe a horse's location but was a distinct colour term that can be found applied to horses of any value.

My survey of the coat colours of 2236 destriers, *equi*, and rounceys on campaign in 1298 and 1311-1312 gives further insights into the prevalence of some shades (Figure 2.5).[199]
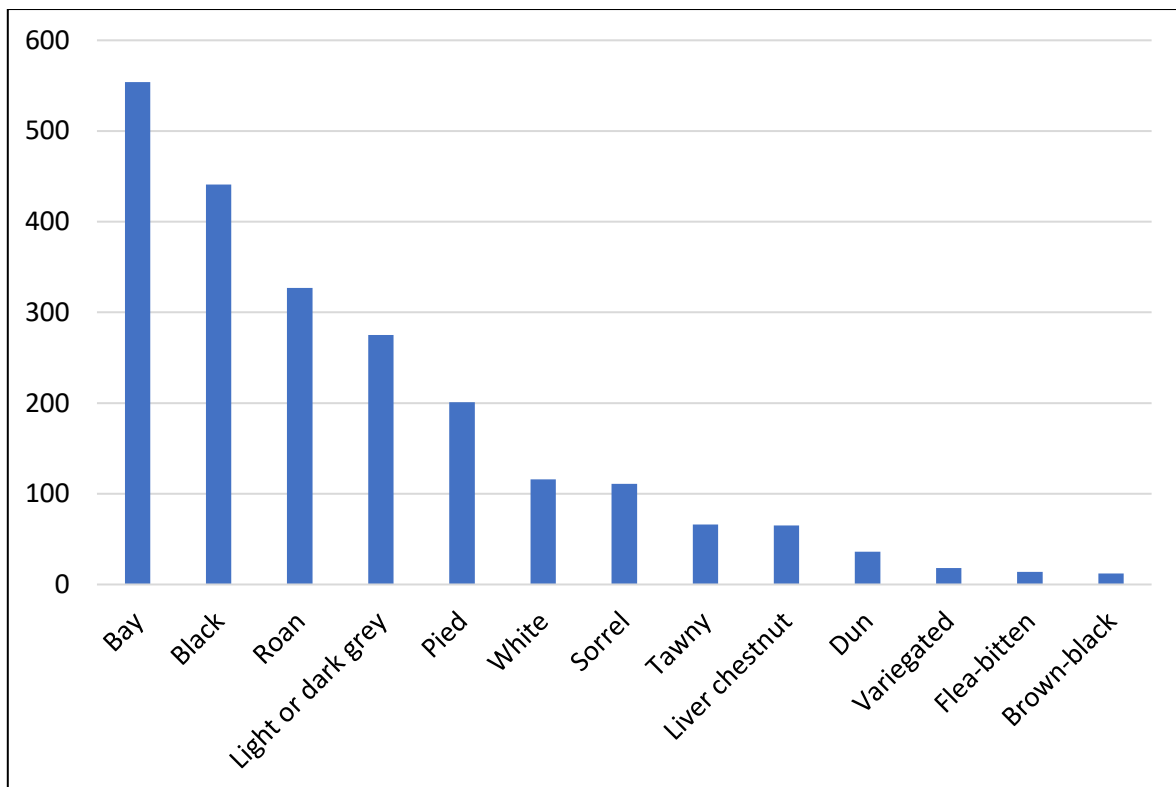
Figure 2.5: Survey of warhorse colours in 1298 and 1311-1312

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[199] The figures are taken from the inventories raised for the Scottish expedition in 1298 (Gough, pp. 161-237) and in the absence of major inventories from the reign of Edward II, are also taken from half a dozen individual retinues raised in Scotland 1311-1312 (Bain, III (1887), pp. 413-32). For clarity, grey includes all shades of grey horses including grey ('grisus'), iron-grey ('ferrandus'), and dapple-grey ('pomele').

This study can be compared to the results of recent research on horse colour phenotypes. Wutke et al. genotyped 107 examples of DNA from horse bones and teeth dating from the Bronze Age to the Middle Ages.[200] Their results showed that there were 'significant differences in coat colour phenotypes between pre-medieval and medieval horses': in the Middle Ages, there was a marked preference for chestnut and black horses over the colour bay and a much-reduced frequency of spotted horses which included pied colouring.[201] The latter was explained by negative selection due to variations in colour preferences over time.

The colour frequencies evidenced by the inventories present a somewhat different picture: of the 2236 horses listed, almost 25 per cent (554 horses) are recorded as bay. Black is the second most frequent colour at 20 per cent (441 horses), followed by roan and grey (15 and 12 per cent respectively). Although Wutke identified chestnut as being the dominant phenotype colour of medieval horses, only 111 horses - less than 5 per cent - are listed as this colour.[202] Pied horses, which the genome research showed as being infrequent due to negative selection, were much more common, making up 201 horses, or 9 per cent of those in the record. A second, wider survey of 256 destriers taken on campaigns between 1297 and 1311 gives similar results.[203] Seventy-nine per cent are bay or black, and 8 per cent are pied.

Light-coloured horses, which frequently appear as knightly mounts in the literature and art of the period, are noticeable by their scarcity. Grey and dapple grey

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[200] Saskia Wutke, and others, 'Spotted Phonotypes in Horses Lost Attractiveness in the Middle Ages', *Scientific Reports* (2016), 1-19.

[201] Wutke, and others, p. 4.

[202] Even if we were to combine all the chestnut variations (chestnut, tawny, and liver chestnut), these would still only represent 10 per cent of the total numbers,

[203] The information was compiled from the following inventories: TNA, E101/6/37; Gough, pp. 160-237; E101/9/24; E101/14/15 mm. 3;9; Bain, III (1887), pp. 413-32.

make up less than 7 per cent of the destrier colours, and there is a complete absence of completely white ones, perhaps because these were considered too visible to enemy troops. Chestnut destriers also appear in only small numbers, making up around 1.5 per cent of those examined. Of interest is the appearance of dun horses on campaign. Writers such as Albertus Magnus had considered this to be an undesirable colour due to its connection with undomesticated horses, but there were 36 dun horses in the first survey, and one of these was a £40 destrier ridden by Sir William de Grandison.[204] The author of the *Practica equorum*, who roundly defended dun horses as being just as good as any other, appears to have been reflecting more contemporary views.

The results of the study by Wutke et al. would have benefited from a greater number of samples to give a more accurate picture of horse colours over time. Bay and black horses were popular in the armies of Edward I and Edward II, and almost one in ten were pied. This number would increase if all the horses with spotted markings were to be included. For example, in 1298 Sir Laurence de la Rivere had a sorrel bay horse *cum macula super croupam* (with spots on its quarters), and in the list of horses on active service in 1311 there is 1 bay with a spotted front, and 4 black horses are also described as having spots.[205] Pied horses appear to have been prized by Edward I as a stable list from 1305-1306 shows that he had 13 personal destriers and almost half were of this colour.[206] This is indicated by their names which include Bausan Baltosan, Bausan Noble and Bausan Prage. Horses described as *morellus*, or brown-black, were also the objects of royal favour. They only appear in small numbers in the first survey (a mere 12 in total), but Edward had 3 *morellus*

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[204] Gough, p. 201.
[205] Gough, p. 163; Bain, III (1887), pp. 413; 419; 421; 428.
[206] TNA, E101/613/15.

destriers alongside his pied horses. Black-brown and pied destriers also appear on the royal studs: Morel de Ber and Baucan de Gloucester can be found serving mares at Knowle, Morel de Bek stood at Rayleigh and Eastwood, and Morel de Kenyton (possibly from Kennington in Kent) was the resident stallion at Reading.[207] The fact that pied and black-brown horses were less common than bay or plain black horses may have made them more attractive to a king who perhaps wanted to stand out, and their presence on royal studs could indicate attempts to selectively produce similar-coated horses. Edward certainly appeared to have a close interest in such matters: on hearing that the merchant Borgeys the brother of Pute (le frere Pute) had procured for the king a new horse, he immediately wrote a letter asking for details of it, including questions about its colour.[208]

Markings

In addition to recording the coat colours of horses appreciated for campaign the appraisers also documented their markings. This was an important part of the appraisal process as it allowed for greater differentiation between horses of the same colour. Details such as white facial markings and white hooves are carefully noted in the inventories, as are any other unusual features that might aid identification. Curiously, the type of facial markings recorded is limited to two types, a star (a small patch of white between a horse's eyes) and occasionally a white muzzle. Other markings, such as a narrow stripe down the nose, or a wider one (a blaze), do not appear, and yet these are common features of many horses and would surely have helped in identification. They can, however, be found in some

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[207] TNA, E101/97/6; E101/97/12; E101/97/18; E101/99/14.
[208] TNA, C47/22/3/70, translated in Bain, II (1881), p. 395.

Continental inventories, for example on the 1309 Aragon campaign one Sans de Vallterra was recorded as having 'a black horse, with a white stripe on the forehead and the nose'.[209]

The reason for English appraisers only noting two types of facial markings is unclear but a clue might lie in the inclusion and omission of other white features. If a horse had white feet their number and position were always noted: at Falkirk, Thomas de La Ware had a bay with two white hind feet and Walter de Bodenham's roan rouncey was recorded as having a white left forefoot.[210] The colour of a horse's hoof is often determined by the pigment of its leg so these horses will have had white markings on their limbs. These can vary in length from a band of colour around the horse's ankle (a sock) or extend further up the leg over the knee joint (a stocking). These are not included in warhorse descriptions and the reason for omitting these and other facial markings was likely due to practicality and time constraints. Horses inevitably get dirty from riding on roads or across the countryside, so when it came to identifying sick or dead horses it would have been easier to clean only their hooves or foreheads than wash off all their limbs and faces. This would have helped to speed up the identification process and this would have been an important factor, especially when troops were moving through hostile territory. Even in the comparatively safe environment of the muster, recording the intricate variations in the position, length, and shape of the white markings on every horse would have been extremely time-consuming.

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[209] Vincent Baydal Sala, *La croada d'Almeria, 1309-1310: La host de Jaume II i el finançament de la campaña* (Riga: Omniscriptum Publishing Group, 2012), p. 123, 'I cavall negre, ab I lista blancha en lo front e en lo morro'.
[210] Gough, pp.188; 191.

Sometimes appraisers did feel the need to include an unusual feature that could be used to identify a horse. Several horses in the inventories raised for the Scottish campaign in 1298 are recorded as *monoculum* or having only one eye.[211] A rouncey put forward for appraisal by Richard of Bristol in 1282 is noted as having a shorn mane, another was listed as having a *cauda cissa*, or cut tail.[212] The cutting of horses' hair was sometimes seen as a mark of shame and ridicule, but could equally serve as a form of retribution.[213] In 1274 Walter de Traylly objected to handing over his inherited lands to the king on account of his minority by cutting off the tail of the sub-escheator's horse; in 1311 Sir John Paynel imprisoned William Reymund and cut the tail off his horse for non-payment of a ransom.[214] Such horse mutilation is also found in thirteenth-century Welsh laws: if someone cut the tail of a destrier he had to pay a fine of 24d.[215] Whether the shorn mane and tail of the rounceys in the Welsh inventory indicated some form of reprisal against the owners is not clear, but it did not appear to seriously devalue them as these horses were appraised at £8 and £6, placing them in the mid-range of rouncey values on that campaign.

Sex

An analysis of warhorses would not be complete without a discussion of their sex. Many historians have assumed that all warhorses were entire (uncastrated) male

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[211] Gough, pp. 168; 190; 227.

[212] TNA, C47/2/7, mm. 2; 6.

[213] The most famous case of equine tail cutting concerned the mount belonging to Thomas Becket, Archbishop of Canterbury in the twelfth century. For a discussion on this incident and the symbolic meaning of horse mutilation see Andrew Miller, 'Tails of Masculinity: Knights, Clerics, and the Mutilation of Horses in Medieval England', *Speculum 88* (2013), 958-95.

[214] *CPR*, Edward I, 1272-1281, p. 44; *CPR*, Edward II, 1307-1313, p. 372.

[215] Jenkins, 'The Horse in Welsh Law Texts', pp. 73; 75; Aberystwyth, National Library of Wales, MS Peniarth 28 Leges Hywel Dda, fol. 24ᵛ.

horses and that mares were reserved for breeding or agricultural use.[216] The most oft-cited evidence for using stallions in battle is attributed to Albertus Magnus who stated that 'warhorses are not castrated as from castration they become timid', the implication being that the natural aggression of stallions was an attribute in warfare as they could be trained to 'break up enemy lines by biting and kicking'.[217] The idea that a knight would ride a mare was portrayed as shameful in Chrétien de Troyes's *Roman de Perceval*. In this tale the knight Gawain is derided for riding a rouncey but his tormentor declares that he would be even more humiliated if it was a mare for his 'disgrace would be greater still'.[218]

The idea that stallions were more suitable for warfare was reinforced in contemporary manuscript illustrations. The popular romances that were circulating in the courts of Edward I and Edward II featured many illustrations of knights fighting on horseback. In most of these images it is made clear that these horses were stallions as the illustrators took pains to make it obvious that they had their testicles intact.[219] This of course could be attributed to the desire of artists to emphasise the masculinity of the horses' riders by drawing attention to the virility of their mounts, but it is likely that some, if not all, destriers were stallions.[220] This was due to their value

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[216] Davis, p. 18; Gladitz, p. 158; Sally Harvey, 'Horses, Knights and Tactics (The R. Allen Brown Memorial Lecture, 2018)', in *Anglo-Norman Studies XLI: Proceedings of the Battle Conference 2018*, ed. by Van Houts Elisabeth, 1-22 (Woodbridge: Boydell and Brewer, 2019), pp. 1-22 (p. 9).

[217] Albertus Magnus, pp. 1378-79. 'Bellicorum autem equorum est non castrari quia ex castratione efficiuntur timidi […] irrumpere acies mordendo et calce feriendo'.

[218] Chrétien de Troyes*, The Complete Story of the Grail: Chrétien de Troyes' Perceval and Its Continuations*, p. 62.

[219] For examples of manuscripts produced in England in which horses are depicted with testicles see Paris, BNF, Français 123 Lancelot du Lac (1275-1280); Paris, BNF, Français 24363 Roman de Toute Chevalerie (1308-1312); BL, Royal MS 2 B VII (1310-1320; Oxford, Bodleian Library, Christ Church, MS 92 Liber de Nobilitatibus, Sapientiis et Prudentiis Regum (1326-1327); BL, Additional MS 47680 Secretum Secretorum (1326-1327).

[220] For works on representations of medieval masculinity see Ruth Mazzo Karras, *From Boys to Men: Formations of Masculinity in Late Medieval Europe* (Philadelphia: University of Pennsylvania Press, 2003), pp. 36-41; Vern L. Bullough, 'On Being a Male in the Middle

as breeding stock: Ferrand de Bek, one of Edward I's destriers, can be found

stationed at Chester during the second Welsh war and several years later the same

horse is recorded as being used to serve the royal mares at the stud of Woodstock,

demonstrating that destriers took an active role in breeding after they were retired

from campaign.[221] The authors of hippiatric treatises certainly equated warhorses

with male horses by structuring their discourses on horse care, training, and

remedies around 'male equine physiology and behaviours coded as male'.[222]

Despite the cultural evidence that warhorses were stallions and the obvious breeding

value in keeping horses entire, there are indications that some of the horses taken

on campaign were geldings (castrated horses), and in some circumstances, mares.

     Horses are castrated by removing their testicles to inhibit the production of

testosterone, and today the procedure is usually carried out to make male horses

more docile and easier to manage if they are not intended for breeding.[223] This was

recognised by the agronomist Varro (116 – 27 BC), whose work influenced many

hippiatric texts.[224] Although he advocated that military horses should be kept entire

as they needed to be spirited, horses used for the road (presumably for haulage or

riding) should be castrated to make them quieter.[225] The pacifying effect of castration

was discussed by the hippiatric author Laurentius Rusius, who explained that 'after

horses are castrated, they are made tame and are not *restivus'*, a condition

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Ages', in *Medieval Masculinities: Regarding Men in the Middle Ages*, ed. by Clare A. Lees (Minneapolis: University of Minnesota Press, 1994), pp. 31-44 (esp. p. 43).
[221] TNA, E101/97/13, m. 1; E101/97/12, m. 3.
[222] Harrison, 'Jordanus Rufus and the Late-Medieval Hippiatric Tradition: Animal-Care Practitioners and the Horse', p. 161.
[223] M. Horace Hayes, *Veterinary Notes for Horse Owners*, rev. by P. D. Rossdale (London: Edbury Press, 1987), p. 539.
[224] Harrison, 'Jordanus Rufus and the Late-Medieval Hippiatric Tradition: Animal-Care Practitioners and the Horse', p. 167.
[225] Marcus Terentius Varro, *On Agriculture*, trans. by William Davis Hooper, rev. by Harrison Boyd Ash (Cambridge MA: Harvard University Press, 1960), p. 391.

characterised by wilful disobedience.[226] It was, however, viewed as the *ultimum*

remedium (ultimate remedy), suggesting that it was used as a final resort if stallions

proved overly intractable.

Textual evidence of castrated warhorses can be found in a thirteenth-century

manuscript copy of Welsh law codes in which the value of horses is given for the

purpose of compensation. Destriers are worth a pound, and 'castrated horses, if not

destriers' are valued at 80d.[227] This is significant for two reasons: the castration of

horses was common enough to find its way into some legal documents, and it

implies that some destriers were geldings. Evidence of English royal policy on

equine castration can be found in instructions given to the keeper of Inglewood

Forest in Cumbria in 1330. He was ordered to inspect the area and to remove or

castrate any low-value stallions that had been agisted in the area, as they had been

indiscriminately mating with royal mares, resulting in poor-quality foals.[228] Although

these stallions were not warhorses, it nonetheless shows that castration was used to

control breeding during this period. Such methods were used by the Teutonic Orders

in Prussia who reserved some of their horses as stud stallions but contrary to cultural

ideology, castrated those they used for warfare. The latter were referred to as

mönchpferde or *mönchhengste* (monk horses), a name that conveyed the idea of

castration through an association with monastic vows of chastity.[229] There were two

benefits to castrating warhorses: they could not be used as breeding stock if they fell

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[226] Laurentius Rusius, p. 384. 'Postquam equi castrati fuerint, efficiuntur mansueti, et restivi non errant'.

[227] Jenkins, 'The Horse in Welsh Law Texts', p. 73; Aberystwyth, National Library of Wales, Peniarth MS 28, Leges Hywel Dda, fol. 25ᵛ (p. 49), column 1, lines 21-22. 'Equi castrati si n[on] n[isi] dextr[ari]i sit'.

[228] *CCR*, Edward III, 1330-1333, pp. 73-74. Agistment was right of Freemen to pasture stock in the king's forest in exchange for payment.

[229] Sven Ekdahl, 'Horses and Crossbows: Two Important Warfare Advantages of the Teutonic Order in Prussia', in *The Military Orders: Welfare and Warfare*, ed. by Helen Nicholson (Aldershot: Ashgate, 1998), pp. 119–51 (pp. 128-29).

into enemy hands and they were purported to be easier to use together in tight units than stallions who might attempt to fight each other.

The use of geldings and possibly mares on English campaigns is suggested by an order issued by Edward II in December 1324 to William de Felton to assemble '100 hobelars mounted on horses other than mares' for the Gascon campaign.[230] The fact that the edict does not stipulate stallions could suggest that the expectation was that any male horses, whether entire or gelded, would be brought forward for the muster instead. This order also suggests mares *were* used on campaign, although it is not clear if this was a widespread practice or a peculiarity of the hobelar troops who first appeared as Irish contingents during Edward I's Scottish campaign of 1296.[231] Why mares were prohibited from being used in Gascony is not known, but using mares in close proximity to destrier stallions, especially as the muster was originally planned for March (the beginning of the breeding season) would have made the stallions more difficult to manage.

There is evidence for the use of geldings and mares in foreign military retinues: in the military treatise written by Theodore Palaeologus (*c*. 1290-1338), the second son of the Byzantine emperor Andronicus II, mounted fighting men were advised to use two horses, 'that is to say, geldings or at least two mares'; in the Statutes of Mantua, Italy, written in 1303, the horses belonging to the municipal militia were referred to as *equus vel equa* - presumably male horses or mares.[232]

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[230] *CPR*, Edward II, 1324-1327, p. 78.
[231] Robert W. Jones, 'Rethinking the Origins of the Irish Hobelar', in *Medieval Communities in Late Medieval England: Essays in Honour of Andrew Ayton,* ed, by Gary P. Baker, Craig L. Lambert and David Simpkin (Woodbridge: Boydell Press, 2018), pp. 15-30 (p. 16)
[232] D. J. A. Ross, 'The Prince Answers Back: Les Enseignements de Théodore Palologue', in *The Ideals and Practice of Medieval Knighthood: Papers from the First and Second Strawberry Hill Conferences*, (Woodbridge: Boydell, 1986), pp. 165-77 (p. 169). *Della economia politica del municipio di Mantova,* ed. by Carlo d'Arco (Mantua: [n. pub.] 1842), p. 395.

Unfortunately extant English sources do not provide similar evidence for the use of mares in armed combat, but female horses were certainly used by military personnel in one capacity or another. In an army plea roll that lists offences committed by members of the king's forces in Roxburgh *c.* 1296 several horse thefts are listed, including one case in which William, the army's carpenter, had his mare and saddle stolen.[233] Although the army inventories do not make clear the sex of the destriers, *equi*, and rounceys that men-at-arms rode, it is not beyond the realms of possibility that some were geldings or even mares.

Conclusion

This chapter has investigated the types of horses that were used in war. An analysis of the horse inventories has revealed that military officials placed warhorses into three categories: destriers, *equi*, and rounceys. The valuation of these horses was carried out through visual inspections, and the men appointed to appraise the horses based their classifications on the physical characteristics of each horse. Destriers were identified by their powerful conformation, making them eminently suitable for their role as specialist combat horses. They would have been considered large compared to many ordinary working horses and were up to 163 cm tall. Despite their cultural connection with knights, the cost of destriers meant that they made up only a very small proportion of the horses ridden on campaign. Knights of more modest means rode *equi*. These were still good quality horses but were composed of a mixture of horses that fit neither into the classification of destriers nor rounceys. They may have been a combination of destrier half-breeds and coursers. The most

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[233] King's College, London, *People of Medieval Scotland 1093-1371* (2018), Document 5/3/0 (*SHS Misc. xi*, 49-81), <https://www.poms.ac.uk/record/source/8845> [accessed 6 August 2023].

numerous horse type to be found on campaigns was the rouncey. These were lower-valued horses that were probably not dissimilar to the rounceys found outside the military. The values of all three horse types often overlapped with each other, and this was due to appraisers taking into consideration their ages and condition. This meant that an *equus* in its prime would sometimes be considered more valuable than an aged destrier. This chapter has also provided insights into the colours of warhorses and shown that most were bay or black, but pied destriers were common and these were particularly favoured by Edward I. The sex of warhorses has also been addressed. Although it is generally assumed that all warhorses were stallions, it has been shown that castration was carried out in certain circumstances and that mares were used for military duties in garrisons.

Chapter Three: Imports and Acquisitions

The inventories provide much information on the types and valuations of thousands of warhorses used in the campaigns of Edward I and Edward II, and they reveal that men-at-arms had to make substantial capital investments to properly equip themselves for war. But where these horses came from, and how they were obtained, has yet to be properly investigated. The following study undertakes to answer these questions by firstly examining how Edward I and his barons equipped themselves with warhorses for war in Wales in 1276 and 1282, the first of a series of internal conflicts that created a demand for horses suitable for campaigning. The influence of foreign merchants during this period is examined, and the benefits and disadvantages of using international markets as a supply of warhorses are considered. The internal horse trade in England is also discussed concerning the various ways that horses could be purchased by a range of fighting men from different economic backgrounds. The second part of this study examines attempts to breed warhorses by Edward I and II by analysing the *equitium regis* records, a series of financial accounts relating to the royal studs. It considers factors that influenced such operations and examines how stud horses were managed with the aim to create a sustainable supply of warhorses for the royal household.

Imports

The outbreak of the first Welsh war in 1276 is significant for instigating the import of the largest known number of warhorses into England in the Middle Ages. On 12 November 1276 the decision was made to call out the feudal host and from this date

up to the muster on 1 July 1277 a total of 242 horses were purchased from overseas

(Figure 3.1).[234]

Date	Name	Agent	No. of horses	Description	Port or country
15 Nov	Edward I	Nutus Fauberti	20	Horses	Wissant
16 Nov	Henry Lacy	Beneventus of Bologna, John le Graunt	30	Horses	Beyond seas
7 Dec	Otto de Grandison	Unknown	2	Destriers	Wissant
8 Dec	Roger Mortimer, William Beauchamp & others	Donelin of Florence	12	Destriers for Welsh war	Wissant
12 Dec	Edward I	Elias de Hauville	5	Horses	Wissant
12 Dec	Edward I	Matthew Columniers	20	Horses	Wissant
12 Dec	Edward I	Nutus Fauberti	10	Horses	Wissant
26 Dec	Edward I & Henry Lacy	Galvanus of Ferrara	40	Horses	Wissant
26 Jan	Edward I	Donelin of Florence	18	Great horses for Welsh war	France
6 Feb	Edward I	Matthew Columniers	20	Horses	Wissant
8 Feb	William de Valence	Unknown	25	Horses	Wissant
8 Jun	Edward I	Matthew Columniers	40	Horses	France

Figure 3.1: Horse imports from 15 November 1276 to 8 June 1277[235]

The records describe some of these mounts simply as 'horses', others as 'great horses of value for the Welsh war', and 'destriers for the Welsh war', but it is likely that they were all intended as campaign mounts for the king and his magnates. Buying warhorses from abroad was not unusual: King John kept several destriers of Spanish origin in his stables; in 1242 Edward I's father Henry III purchased 60 destriers in Gascony for a planned expedition to France and arranged for Bernard

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[234] *Parl. Writs*, I (1827), p. 3; Morris, p. 116.
[235] Sources for all the figures are supplied in Appendix 2.

William Banyeres and John Elye to purchase 12 horses for him from Castile.[236] The provost of Roncevaux was asked to provide safe passage for these horses and shortly afterwards the merchant Peter of Auvergne was commissioned to buy more horses in Spain.[237] What was unusual in 1276-1277 was the scale of imports within a short period, and this suggests that on the eve of the Welsh campaign, there was a shortage of suitable warhorses in England. Was this partly due to a lesser demand for warhorses in the previous reign or a result of economics? The answer may be due to a combination of both: in comparison to the almost constant series of conflicts under Edward I there was relatively less military activity in his father's reign, and although Henry III did source some warhorses from abroad for his French campaigns, there did not appear to be the same continuously high level of demand for warhorses; also, Henry's dispute with his barons and a period of economic hardship at the end of his rule meant that the royal studs were unlikely to have been a fiscal priority.[238] With less incentive to bear the cost of maintaining an expensive warhorse, and a lack of royal precedent in breeding such animals, it is perhaps not surprising that when the king and his nobles needed warhorses in 1276 they found few in England.

To meet the sudden high demand for suitable mounts the king and his barons had to look overseas. Within a few days of the declaration of war the king sent

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[236] For examples of Spanish horses in King John's stables see *Rotuli litterarum clausarum in Turri Londinensi asservati,* ed. by Thomas Duffus Hardy, 2 vols (London: Record Commission, 1833-1844), I, pp. 163; 176; 190; 192; in the stables of Henry III: *CCR*, Henry III, 1237-1242, pp. 383; 500; for horses from Castiile see *CCR*, Henry III, 1242-1247, p. 529.

[237] *CCR*, Henry III, 1242-1247, p. 529; *Rôles Gascon,* ed. by Francisque-Michel and Charles Bémont, 4 vols (Paris: Imprimerie nationale, 1885-1906), I, p. 110. A proper survey of warhorses under Henry III is yet to be conducted but it appears that many of the warhorses needed for his overseas campaigns were sourced abroad.

[238] Simpkin, p. 8; Davis, pp. 85-86. Horse breeding did not appear to be a priority for Henry III: in 1228 the king sold all his horse breeding stock from the royal stud at Woodstock, see Fine Roll C 60/27, 12 Henry III (1227–1228): Membrane 9', *Henry III Fine Rolls Project* (2023).

agents to purchase horses abroad and a total of 155 were shipped to England for the royal stables. The Earl of Lincoln, Henry Lacy, arranged for 30 horses to be imported, and the following month received a portion of a shipload of 40 horses en route to the king. By the end of January Lacy had assembled a force of 100 paid men-at-arms, and no doubt some of these were mounted on his foreign warhorses.[239] Other commanders also sent abroad for suitable mounts: the 9th Earl of Warwick, William Beauchamp (captain of Chester and Lancaster), and the marcher lord Roger Mortimer (commander of Montgomery) used agents to purchase a total of 12 destriers; the 1st Earl of Pembroke, William de Valence, bought 25 horses; Otto de Grandison, the Savoy knight who was influential in the siege of Dolforwyn castle in April 1277, shipped 2 destriers across the Channel, presumably one to use on campaign and a spare should it be killed.[240] Clearly, these foreign horses met the criteria for the type of mounts considered suitable for members of the fighting aristocracy. They must have had the kind of conformation that allowed them to perform athletically, the strength to carry an armoured knight, and most importantly, they must also have been already trained in combat. With the campaign only months away (and for those horses imported in June, only a matter of days) there was little time to train horses for war, and it is unlikely that the king or his nobles would have risked taking untrained mounts into conflict.

Where did these warhorses come from and who were the agents employed to find and purchase them? The records provide little in information relating to the origin of these foreign horses, and the purchase of Lacy's horses from 'beyond seas' is of little help. However, on two occasions France is mentioned, and the point of

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[239] Morris, p. 121.
[240] *CPR*, Edward I, 1272-1281, pp. 169; 171; 184; 186; 191; 194; 277.

embarkation for almost all the horses is given as Wissant, a port located 18 km from modern-day Calais. It is likely that all the horses imported between November 1276 and the summer of 1277 were purchased in France. The benefits of buying warhorses in France were twofold: the country was a nexus for the international horse trade, and its geographic proximity meant that horses could be quickly transferred to England. Horses could be bought at the French fairs of Paris, Chalon-sur-Saône, and Lyon, but the main market for warhorses was to be found in the fairs held in the Champagne region in north-east France. This area was a prime location for commerce, being bisected by the main north-south route between Flanders and Italy, and the east-west road connecting Paris to Germany. The Champagne fairs attracted merchants and buyers from countries such as England, France, Flanders, Germany, Italy, and Spain, prompting a thriving trade in a variety of goods including cloth, wool, dyes, furs, and spices.[241]

Six Champagne fairs were held every year, beginning with Lagny-sur-Marne in January, Bar-sur-Aube in March, Provins in May, and Troyes in July. The cycle continued with a return to Provins in September and ended with a final fair in November held back in Troyes. Each fair lasted for around six weeks with short breaks between each one to enable merchants to travel between the various sites.[242] This meant the fairs were able to offer an 'almost continuous market' throughout the year, and when Edward and his nobles needed mounts in November 1276, they

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[241] Félix Bourquelot, 'Études sur les foires de Champagne, sur la nature, l'étendue et les règles du commerce qui s'y faisait aux XIIe, XIIIe et XIVe siècles', *Mémoires présentés par divers savants à l'Académie des inscriptions et belles-lettres de l'Institut de France. Deuxième série, Antiquités de la France*, 5 (1865), 1-335 (p. 74).

[242] J. Edwards and S. Ogilvie, 'What Lessons for Economic Development Can We Draw from the Champagne Fairs?', *Explorations in Economic History* 49 (2012), 131-48 (p. 131).

would have had just enough time to negotiate the purchase of horses at the fair held in Troyes.[243]

The sale of warhorses was an established feature of the Champagne fairs: when Henry III sent his clerks to Lagny-sur-Marne in 1241 he directed them to purchase 'good destriers', and in 1269 Louis IX of France also turned to the fairs for warhorses shortly before the Eighth Crusade. Destriers were bought at Lagny, Bar-sur-Aube and Provins, and the king's purchases included horses from Lorraine, Spain, and Italy.[244] What might have made horses from these regions popular for warfare? A clue might lie in the genetics of modern Iberian and Italian horses. Research using mitochondrial DNA indicated that the ancestral origin of Iberian horses was closely related to the Berber horses from North Africa, probably due to these horses being introduced to the Iberian Peninsula during the Muslim conquest of Spain in the eighth century.[245] Likewise, DNA from ten modern Italian breeds suggested that there was a high probability that ancestral mares carried Oriental bloodlines.[246] The noble horses described in hippiatric texts must have carried these genes and this gave Spanish and Italian horses the kind of athletic conformation ideal for mounted combat. The presence of such horses in the Champagne fairs made these venues a popular source of mounts suitable for aristocratic men-at-arms.

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[243] J. Edwards and S. Ogilvie, p. 136. For further information on the fairs and their administration see R. D. Face, 'Techniques of Business in the Trade between the Fairs of Champagne and the South of Europe in the Twelfth and Thirteenth Centuries', *The Economic History Review*, 10 (1958), pp. 427- 38.

[244] Bourquelot, p. 303.

[245] L. J. Royo and others, 'The Origins of Iberian Horses Assessed Via Mitochondrial DNA', *Journal of Heredity*, 96:6 (2005), 663–69 (p. 668). Also see A. Fages and others, 'Tracking Five Millennia of Horse Management with Extensive Ancient Genome Time Series', *Cell*, 177 (2019), 1419-35.

[246] Irene Cardinali and others, 'An Overview of Ten Italian Horse Breeds Through Mitochondrial DNA', *PLoS ONE* 11:4, (2016), 1-15 (p. 10).

The importance placed on the sale of horses in the Champagne fairs is evidenced in the privileges that the *mercatores equorum*, or horse traders, were accorded. The organisation of each fair ran to a strict schedule: an initial eight days were allocated for sellers to set up their stalls, followed by ten days which were reserved for the sale of cloths. After this, eleven days were set aside for the sale of leather, followed by a period of nineteen days in which merchants could sell goods sold by weight (such as spices and wine). A final four days were allocated for accounting and administration.[247] However, local, and foreign horse merchants were able to take almost full advantage of the fair period, being allowed to stable and sell their horses from the third day of the cloth sales. This gave merchants and prospective purchasers ample time to conduct their business, and for the latter to thoroughly assess the horses before money exchanged hands. Special horse-trading areas were set up outside of the main fair, usually on the outskirts of the town, called *cours aux chevaux* or *cursus equorum*.[248] These were probably enclosed, flat spaces where pre-purchase inspections could be carried out and where the horses could be ridden to show off their paces.

Many of the horses for sale had travelled long distances from their original breeding grounds. Italian merchants, the main buyers of raw wool and unfinished cloth at the fairs, also dominated the horse trade.[249] Strings of horses were led from Italy across the Alps to the Champagne fairs each year using the Mont Cenis, Simplon, and Saint Bernard passes. Records at Saint-Maurice d'Agaune (one of the principal towns and Savoyard toll stations through which merchants passed between

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[247] Face, p. 427.
[248] Bourquelot, p. 303.
[249] Anne-Marie Bautier and Robert-Henri Bautier, 'Contribution à l'histoire du cheval au moyen âge: l'élevage du cheval', *Bulletin philologique et historique* (1978), 9-75 (p. 63).

Italy and the Champagne fairs) reveal that 1,700 horses travelled through between 1294 and 1295, and 2,500 horses made the journey between 1295 and 1296.[250] The rate at which groups of horses could be led overland would have been consistent with that of merchant caravans. Richard Face calculated that these travelled at an average speed of 25-29 km per day, so it would have taken around a month for merchants to lead their horses from northern Italy to the Champagne fairs.[251] Traders taking the most direct route from Lombardy to the November fair at Troyes would have to cross the Great Saint Bernard or Simplon passes, entailing a journey of approximately 700 km.[252] That meant they would have had to start their journey at the end of September to allow for four continuous weeks of travel, with the occasional day taken off to allow the horses to rest. Horses from further afield would have faced a longer overland journey. Merchants bringing horses from Apulia would have had to allow two months to reach the fairs, although it is possible that some may have shipped their horses to Genoa and from there joined the caravans of merchants crossing the Mont Cenis pass into France.

Traders bringing horses from Spain to the fairs crossed the Pyrenees via the Roncevaux pass.[253] In 1243 Henry III brought six Spanish destriers from Castile along this route, using the services of Dominic Pachal, Roncevaux's provost.[254] Records from the accounts of King James II of Aragon (1291-1327) show that there

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[250] Bautier, p. 67.
[251] Face, pp. 429; 436.
[252] Isotope analysis of horse teeth excavated from a Tudor burial site in London suggests that some of the horses had spent time in the Central Alpine region before reaching England. This suggests that these trade routes were still active in the sixteenth century. See Alexander J. E. Pryor and others, 'Isotopic Biographies Reveal Horse Rearing and Trading Networks in Medieval London', *Science Advances* (2024), 1-14 (p. 8).
[253] The Somport pass, which links one of the pilgrim routes from Toulouse to Jaca, was less likely to be used by Spanish horse traders due to its high elevation (1600 m above sea level) and steep descent into France.
[254] *CPR*, Henry III, 1232-1247, p. 363.

was a lively trade in horses from Spain to France, with merchants from Catalonia, Castile, Aragon, and Navarre requesting licences to export both war and work horses.[255] Once at Roncevaux, guides could be hired to lead groups of horses through the pass and those destined for the Champagne region then faced an 800 km journey lasting several weeks. What must have made purchasing horses directly from Spain a less attractive option for the English aristocracy was the requirement for export licences and the time needed to get the animals to England. Letters had to be sent requesting permission from ruling monarchs to move horses out of the country, replies received, and then suitable mounts had to be found and taken to the ports of Bayonne or Bordeaux where they could be shipped through the Bay of Biscay and across the Channel.

Merchants attending the Champagne fairs enjoyed certain privileges such as automatic passes of safe conduct whilst travelling to and from the fairs.[256] Their proximity to the nearest port of Wissant (located around 375 km from Troyes) was also an advantage as buyers could leave the fairs and reach the coast with their strings of horses within a fortnight. There is no written evidence of ships being specially commissioned to sail the horses from Wissant to Dover in 1276-1277 but considering the numbers needing transportation it is likely that arrangements had been put in place. This was the case in 1303 when Genoese merchants at the port of Wissant were able to hire an English ship berthed at Dover to collect and transport their cargo of horses and arms to England.[257] Merchants wanting to ship smaller

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[255] Yves Renouard, ''Un sujet de recherches: L'exportation de chevaux de la péninsule Ibérique en France et en Angleterre au moyen âge', in *Homenaje a Jaime Vicens Vives*, ed. by Juan Nicolau Maluquer de Motes, 2 vols (Barcelona: Universidad de Barcelona, 1965-1967), I (1965), pp. 571-777 (pp. 573-76).

[256] J. Edwards and S. Ogilvie, p. 131; Janet Abu-Lughod, *Before European Hegemony: The World System A.D. 1250-1350* (Oxford: Oxford University Press, 1991), p. 58.

[257] *CPR*, Edward I, 1301-1307, p. 158. The trip was an eventful one: bad weather caused the ship to be blown off course to Sandwich, where Flemish racketeers pirated the entire cargo.

numbers of horses could take advantage of one of the regular passenger services that ran between the two ports. These ships were able to comfortably accommodate around 25 horses in their holds but captains seeking to maximise profits sometimes carried twice this number.[258]

The trade in horses at the Champagne fairs was dominated by Italian merchants, so it is probably no surprise that Edward and his nobles turned to these men to purchase their mounts for the war.[259] On 16 November Roger Mortimer and William Beauchamp engaged the services of Donelin of Florence to find a dozen suitable horses, and three weeks later the merchant can be found at Wissant waiting for clearance to ship this number to England. This suggests that Donelin had connections within the international horse trade and was probably in touch with agents abroad. The horses may have been purchased in the fairs at Chalon or Paris, but it is also possible they were bought at Troyes. The use of agents by merchants attending the Champagne fairs is attested in Richard David Face's study, and mounted messengers (who could cover around 55 km a day) were often sent ahead to arrange sales.[260] Donelin would have had just enough time to dispatch a message to his contacts at Troyes, arrange the purchase of horses, and have them brought to Wissant for shipping on 8 December. At the end of January Donelin was back on French soil, this time to purchase 18 'great horses' for the king. These may have been bought at Lagny, the same fair that had supplied Henry III with destriers some decades beforehand.

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[258] William Chester Jordan, *From England to France: Felony and Exile in the High Middle Ages* (Princeton: Princeton University Press, 2017), p. 80.
[259] Bautier, p. 63.
[260] Face, pp. 434-36.

One of the most prominent Italian horse-trading families operating in England during this period was the Fauberti. Brothers Nutus and Bourgeois were specialists in the acquisition of warhorses. They had been active in England for several years, combining a business in the wool trade with horse dealing.[261] They first appeared in 1268 when they sold Henry Lacy, third Earl of Lincoln, a horse worth £50, and they went on specialise in providing elite horses. A letter sent to Edward asking if the king would like them to procure him a 'splendid horse' brought them to royal attention, and they supplied the king with 30 horses bought in France for the first Welsh war.[262] The Fauberti were also active in providing mounts for several other prominent men: between 1275 and 1279 records indicate they were owed a total of £768 by knights such as John de St John, Roger L'Estrange and Adam Crettynge, to whom they had extended credit for purchases of horses.[263] The main horse market used by the Fauberti was the Champagne fairs. At Bar-sur-Aube in March 1293 Nutus and his brothers Bourgeois, Gydo and Uncius, bought horses to the value of 1,600 livres tournois (approximately £400) from a Tuscan horse dealer named Puchius de Prato. These horses were also purchased on credit, but a case for non-payment was raised by the wardens of the fair. The dispute lasted several years and was not resolved until the mayor of London interceded 1299, claiming he had seen proof of payment evidenced by a receipt issued under the seal of the fair.[264] The attendance of the Fauberti at the Champagne fairs demonstrates that these markets were a popular

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[261] *CPR*, Henry III, 1266-1272, p. 553-54. Nutus appears in 1271 amongst a list of merchants prohibited from exporting wool during a dispute with Flanders.

[262] TNA, SC 1/19/176A, *CPR*, Edward I, 1272-1281, pp. 169; 184.

[263] *CCR*, Edward I, 1272-1279, pp. 253; 342; 349; 350; 357; 358; 413; 427; 488; 489; 554; 564; 577; 582. The records do not make clear the subject of these debts, but the values (between eight and eighty pounds), and the brothers' prominence as horse dealers, strongly suggests that they were for purchases of horses.

[264] *Calendar of Letter Books of the City of London c. 1291-1309,* ed. by Reginald R. Sharp (London: HMSO, 1901), pp. 59; 64.

source of high-quality horses for the English nobility. However, French foreign

policies were to make this source of warhorses somewhat unreliable.

Issues surrounding the import of horses from France were first felt when

further Welsh rebellions in the spring of 1282 resulted in a second war between

England and Wales. As with the previous conflict, Edward and his nobles turned to

France to purchase their warhorses. On 5 April the Fauberti were instructed to sail to

France to purchase 80 great horses for the king, but complications arose when they

attempted to ship them from Wissant.[265] King Philip III of France effectively

blockaded the shipment by issuing a prohibition on warhorses and arms from leaving

France.[266] Edward wrote to Philip asking for the export ban to be relaxed so that his

80 horses could exit the French port, but in his reply, Philip stated that warhorses

were needed for the 'service and security' of France, with no exceptions.[267] To

compound the situation, William Beauchamp and his younger brother, Walter, had

also recently purchased 36 horses in France and must have found themselves in a

similar predicament.[268] With his warhorses stranded at the French port, Edward was

forced to come up with an alternative plan. In May letters of safe conduct for

'merchants bringing great horses into England through the territories of the count of

Holland and Zeeland' were issued.[269] This can only have pertained to the Fauberti,

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[265] *CPR*, Edward I, 1281-1292, p. 14.
[266] Charles Victor Langlois, *Le Règne de Philippe III le Hardi* (Paris: Hachette, 1887), p. 371. Edward employed a similar policy in 1306 by prohibiting the export of provisions, horses, and arms from England: Bain, II (1884), p. 506.
[267] *Lettres de rois, reines et autres personnages des cours de France et d'Angleterre depuis Louis VII jusqu'à Henri IV tirées des archives de Londres*, ed. by Louis George Oudard Feudrix de Bréquigny and Jacques-Joseph Champollion-Figeac, 2 vols (M. Champollion-Figeac, 1839-1847), 1 (1839), pp. 285-86. In this edition the letter is incorrectly dated as 1281: the second Welsh war began in 1282, the same year the Fauberti received letters of safe conduct to bring the eighty great horses out of France to England.
[268] *Calendar of Various Chancery Rolls: Supplementary Close Rolls, Welsh Rolls, Scutage Rolls Preserved in the Public Record Office 1277-1326*, ed. by H. C. Maxwell Lyte (London: HMSO,1912), p. 217.
[269] *CPR*, Edward I, 1281-1292, p. 18.

meaning they were able to circumvent Philip's prohibition by rerouting their strings of horses through the Netherlands. The Beauchamps probably followed suit.

The prohibition of warhorse exports was perhaps prompted in part by Philip's plans for an Aragonese Crusade following Peter III of Aragon's support of the Sicilian rebellion against French rule, and may also have been a ploy to exert pressure on Edward to provide troops as part of his duty as a vassal.[270] Many horses were needed for the crusade, and for several years the king had been concerned about the low numbers of remounts available in France. The lack of horses for French troops was reflected in policies put in place by the king in 1279: knights with £200 worth of land were required to keep a broodmare; men of high status, such as dukes and abbots, had to keep a stud farm with at least four broodmares; a cap on horse prices was also issued, so no one was allowed to purchase a palfrey worth more than 60 *livres tournois*, or a rouncey worth more than 25, and lastly, merchants and merchant companies were limited to selling a maximum number of 30 warhorses at French fairs.[271] These policies were designed to encourage the nobility to breed their own horses, and the pricing and sales restrictions meant that high-value animals could be diverted to the king.

Why was there still a need to import warhorses in 1282 after so many foreign horses had been shipped into England only five or six years previously? The reasons were likely due to horse losses during the first Welsh war and the fact that not enough time had elapsed to breed replacements. Davis suggested that the destriers imported in 1277 may have been used to cover (mate with) mares before they were sent to troops in Wales, but this was unlikely.[272] Mares begin their oestrus cycles in

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[270] Prestwich, *Edward I*, p. 321.
[271] Langlois, pp. 371-72.
[272] Davis, p. 87.

spring, when almost all the imported destriers were already on campaign. It was more likely that the warhorses purchased in France were only moved to their owners' respective stud farms after a peace treaty was made in November 1277. This meant that breeding would not have commenced until the March 1278. When the second Welsh war broke out in 1282 the resulting foals would have been only three years old and too immature to be used as warhorses.[273] The dearth of suitable mounts led to the king issuing similar policies to the French king: on 26 May 1282 a statute was issued to address the lack of 'great horses suitable for war' by ordering all those with 30 librates or more of land to equip themselves with 'a suitable great horse with appropriate armour'.[274] This placed the onus on men-at-arms to keep a warhorse ready for service at all times, but the difficulty in sourcing appropriate mounts meant that a month later a new writ allowed for the payment of a fine in place of a horse.[275]

The French prohibition on horse exports was rescinded in 1285 but reinstated the following year, allowing just enough time for Thomas, the queen's marshal, to purchase horses from the fair at Troyes.[276] For the remainder of Edward's reign, and most of Edward II's, export bans were repeatedly renewed (notably in 1304, 1312 or 1314) making France a less than reliable source for warhorses.[277] This was compounded by the annexing of Champagne by France in 1285, effectively taking control of the fairs away from the Counts of Champagne and placing them under royal jurisdiction. This meant that all trade at the fairs was directly subject to French policy. Italian merchants were directly affected, firstly by the implementation of heavy

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[273] For the ages at which horses were broken and trained see Chapter Five.

[274] *Parl. Writs*, I, p. 226. 'Magnis et competentibus equis ad arma […] unum equum fortem et competentem ad arma una cum armaturis competentibus'.

[275] Charles Gladitz, *Horse Breeding in the Medieval World* (Dublin: Four Courts Press, 1997), p. 160.

[276] Bautier, p. 63; Byerly, I (1977), p. xxxvi.

[277] Noé Clothilde, 'Towards an Economic History of the Horse in the Mediterranean Area in the Middle Ages: What Perspectives?' *Cheiron*, 1 (2021), 119-141 (p. 132).

taxes for the right to trade at the fairs, and secondly by a prohibition in 1303 on the export of wool and cloth, one of their main sources of income.[278] This left Italian merchants with less incentive to continue trading at the fairs but occasionally the market was tapped if demand was high and the political climate was favourable. For example, in January 1307 Edward's main Italian financiers, Betino and Amerigo Frescobaldi, were contracted to purchase 19 destriers for Prince Edward at the Lagny fair. These cost a total of £489 2s. 8d. and were bought for the prince to use for 'a tournament at Wark (Northumberland) and the war in Scotland'.[279]

However, by 1315 the cumulative effect of French policies and warfare had sent the Champagne fairs into a steep decline, weakening their position as the epicentre of the European horse trade. The decline of the Champagne fairs was exacerbated by the conflict between England and France over the Duchy of Gascony (1294-1303), and this meant that other continental markets had to be exploited. Chief amongst these was Spain. Several months before the French prohibition in 1282 Edward had sent his secretary John de Vescy and Anthony Bek on a diplomatic mission to Aragon and they were given £1000 to buy horses while they were there.[280] Four years later Sir Roger of Mauléon was in Aragon and Navarre, where he bought four horses for £125 8 s. 5 d. (one of which was a destrier valued at £62) for the royal stables, and in 1299 three Spanish warhorses were purchased 'for the king's riding' and were shipped to England from the port of Bayonne in Gascony.[281]

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[278] J. Edwards and S. Ogilvie, p. 140.
[279] Seymour Phillips, *Edward II* (New Haven: Yale University Press, 2010), p. 40, fn. 50. A list of the horses with their descriptions and prices is provided by Blaneforde in his preface: Trokelow, pp. xxv-xxvi. 'Contra torniamentum de Werks et guerram scociae'.
[280] *CPR*, Edward I, 1282-1292, p. 11. Vescy and Bek were sent to negotiate the marriage of Edward's daughter, Eleanor, to Alfonso, the son of King Peter III of Aragon. Edward II also took advantage of diplomatic missions to buy foreign horses: Hugh Despenser the elder was sent to Gascony in 1319 with instructions to purchase destriers if he had the opportunity to enter Spain, see *CCR*, Edward II, 1318-1323, p.123.
[281] Byerly, II (1986), p. 29; *CPR*, Edward I, 1292-1301, p. 588

Merchants based in Bayonne were ideally placed to tap into the nearby pool of horses in Spain. At the time of Edward's death, the Bayonne merchant Paschasius Villa was owed over £259 for wine and horses, the latter of which were probably sourced from beyond the Pyrenees.[282]

Foreign warhorses were also popular with Edward II. The attraction was due to their quality and perhaps also partly due to the prestige of owning expensive commodities imported from overseas. Italian horses were a particular favourite, but the Spanish markets were more easily accessible. The king employed merchants of French, Spanish, and Italian origin to source his horses from overseas. Prominent were the Toulouse brothers William and Pons who in 1310 were commissioned to travel to Spain and Navarre for horses. In the same year two other Italian merchants, Albertinus of Bologna and Jacob Balducci, were also sent overseas for horses, and with preparations being made to mount a campaign in Scotland at this time these animals were probably all destined for the battlefield.[283]

However, the ability of merchants to provide foreign horses relied heavily on stable geopolitical climates. Civil wars and new campaigns could disrupt supplies and trade routes, making conditions difficult even for horse dealers who were well acquainted with the markets. In 1310 the Navarrese horse merchant Dominique Roncevaux was enlisted with instructions to buy six Spanish horses for the king but was only able to find two, for which he paid £33.[284] The Aragonese-Castilian campaigns against Grenada (1309-1310) most likely contributed to the difficulties faced by Roncevaux, who may have found that demands for horses for the

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[282] *CPR*, Edward II, 1307-1313, p. 265.
[283] *CPR*, Edward II, 1307-1313. pp. 204; 290; *CPR*, Edward II, 1307-1317, p. 266.
[284] *CPR*, Edward II, 1307-1317, p. 266; *Gascon Rolls,* p. 137. For Jacob Balducci, see *Rotuli Scotiae in Turri Londensi et in Domo Capitulari Westmonasteriensi Asservati,* I, (1814), p. 93.

expeditions had created a shortage in supply. The Toulouse brothers were also occasionally unable to fulfil their quotas. In March 1313 the brothers were also sent to Spain, this time to find 30 warhorses, but they returned in May with only 22, for which they were paid £602 6 s. 8 d.[285] The reason for not finding the full number is not given, it may have been that horse losses during the campaigns would need several years of breeding to redress, but similar problems were also being felt in France at this time.

In his study of the fairs of Chalon-sur-Saône Henry Dubois examined the numbers of horses traversing one of the main routes from northern Italy to France. Toll figures from Pont d'Ain showed that in 1308 the number of horses being taken to the fair for sale was 206, but by 1313 this number had dramatically reduced to only six.[286] Part of the reason for this drop in numbers may have been the resumption of the Guelph-Ghibelline wars (a series of conflicts between Italian states 1313-1343) which negatively impacted trade between Italy and France, making overland travel from Genoa hazardous.[287] Further signs of difficulties in obtaining warhorses from Italy can also be evidenced a few years later. In 1318 Persone Lombard, a merchant acting as agent for Edward II, wrote to the king to let him know that it was impossible to buy horses in Lombardy due to the dangers of sea passage during the war.[288]

The Warhorse Market in England

Importing warhorses from abroad was one method of obtaining warhorses but what of the horse trade in England? Little is known about how or where horses in England

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[285] *CPR*, Edward II, 1307-1313, p. 589.
[286] Henri Dubois, *Les foires de chalon et le commerce dans la vallée de la saône à la fin du moyen âge* (Paris: Imprimerie nationale, 1976), p. 278.
[287] J. Edwards and S. Ogilvie, pp. 141-42.
[288] TNA, SC8/58/2898.

were bought and sold during the thirteenth and fourteenth centuries. This is mainly due to a paucity of documentary evidence as the horse trade was not subject to legislation or record keeping until the sixteenth century.[289] This means that any exploration of England's medieval horse markets is reliant on piecing together a series of scattered references in Crown and ecclesiastic accounts. These are insufficient to conduct a systematic analysis, but they do provide some interesting insights into the trajectory of the warhorse trade and of some of the individuals that were associated with it.

The lack of warhorses in 1276 and attempts to import more in 1282, indicate that England's warhorse market was almost non-existent in the first two decades of Edward I's reign. Not until the 1290s onwards does evidence of an internal trade in warhorses begin to appear, but by the last decade of Edward I's reign this trade was firmly established. The warhorse market was no doubt stimulated by the almost continuous series of conflicts in Scotland. These generated a continuous demand for warhorses, especially as they frequently required replacing. There were three main avenues for men wanting to buy warhorses: fairs, foreign merchants who had set up horse trading premises in London, and independent dealers.

English fairs were large events that attracted national and international traders selling a wide range of products such as cloth, wool, spices, wine, and livestock. The largest fairs were held at Stamford and Boston in Lincolnshire, St Ives (Cambridgeshire), Northampton, and Winchester (Hampshire).[290] The sale of

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[289] The parliamentary Act of 1555 required the keeping of toll books so that all horse sales could be recorded. These accounts included the names vendors, buyers, and descriptions of the horses sold. For a study of horse trade based on these toll books see Peter Edwards, *The Horse Trade of Tudor and Stuart England* (Cambridge: Cambridge University Press, 1988), pp. 53-54.

[290] Ellen Wedemeyer Moore, *The Fairs of Medieval England: An Introductory Study*, Studies and Texts 72 (Toronto: Pontifical Institute of Mediaeval Studies, 1985), pp. 10; 24.

livestock formed a fundamental aspect of these fairs, and some were tapped for the

supply of army horses. In 1276 Edward I granted safe conduct for his servants to

purchase horses and cattle at Stirling fair and to drive these to Lincoln.[291] Their

purpose is not made clear, but it is likely that these were ordinary horses that were

then purposed as baggage animals for the Welsh war. Similarly, on 19 and 20 May

1319 Sir Walter Wetwang can be found buying horses for the king at Beverley, East

Yorkshire. The date coincides with the annual fair held in that town, and a total of 71

horses were purchased for an average of 30s. per horse.[292] The destination of these

horses is not given, but expenses for travelling them on the roads for a total of four

days is included in the accounts. This would have given Wetwang ample time to take

the horses to York, some thirty miles distant. The king was in residence at York at

the time, and the horses were probably purchased for the muster that had been

arranged at the city for 10 June. The low value of the horses suggests that like those

purchased at Stirling, they were destined as cart or pack animals.[293] The accounts of

John of Grimsby also show similarly low-value horses being purchased for Edward

II.[294] The exact year of the accounts is unknown due to the deterioration of the

manuscript, but these horses were also purchased at the end of May so Grimsby

may have been active in 1319. In this instance 39 horses were bought for between

18s. and £5 per head. They may have been bought at the horse fair in Hull which

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[291] *CPR*, Edward I, 1272-1281, p. 159.
[292] TNA, E101/99/29; *A History of the County of York East Riding: Volume 6, the Borough and Liberties of Beverley*, ed. by K. J. Allison (London: Victoria County History, 1989), <http://www.british-history.ac.uk> [accessed 14 October 2023]. This may be the same Walter Wetwang who became Controller of the Wardrobe in 1342 and its Keeper in 1344.
[293] The manuscript is partly obliterated but the names of more than half of the vendors can be made out. For example, several were from Holderness, around 15 miles away. Interestingly, two vendors are recorded as being from London. It is possible that men with horses to sell travelled north hoping to take advantage of the demand for horses generated by the muster.
[294] TNA, E101/100/37.

was operating from at least 1293, and although the lowest value horses would certainly have been baggage animals, the most expensive may have been rounceys.[295]

The fairs could be useful for supplying ordinary horses but some did attract higher quality animals: Winchester was a popular venue for the acquisition of horses by Henry III and a directive issued to John Dunstable in 1267 to act as a buyer of the king's horses 'in fairs throughout the realm' suggests that a range of horseflesh could be purchased.[296] Such was the case at the fair at Ripon, North Yorkshire, where in 1307 the young prince Edward purchased palfreys for his stables.[297] It is possible that the occasional destrier was sold at some fairs. Lady Margaret Neville, a Yorkshire landowner who had been obliged to provide military service in 1294 and 1300, gifted a destrier to Bolton Priory on her death in 1318.[298] This was promptly sold for £13, and as the priory commonly bought and sold horses at the nearby Yorkshire fairs at St Oswalds, Settle, and Embsay, it may well have been placed for sale at one of these.[299] Horses were also sold at the fair in St Ives, Cambridgeshire, which opened for three to four weeks over the Easter period and attracted merchants from Brabant, Flanders, Normandy and Bordeaux.[300] Unfortunately the types and prices of horses sold there is not recorded, but some may have been warhorses. These could be found offered for sale in the fairs and markets in London, another location that attracted international sellers. An early reference to warhorses for sale

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[295] *The Victoria History of the Counties of England*, ed, by R. B. Pugh (London: University of London Institute of Historical Research, 1969), p. 17.

[296] Wedemeyer Moore, p. 65.

[297] TNA, C47/3/52/13.

[298] Peter McNiven, 'Neville Family', (2004), <https://www.oxforddnb.com> [accessed 10 October 2023); Kershaw, *Bolton Priory: The Economy of a Northern Monastery 1286-1325* (p. 105.

[299] Kershaw, *Bolton Priory: The Economy of a Northern Monastery 1286-1325*, pp. 103-05.

[300] Wedemeyer Moore, pp. 14; 83.

in this city can be found in the writings of William FitzStephen (*d. c.* 1191), one of the

Archbishop of Canterbury's clerks. FitzStephen described how he visited Smithfield

horse fair to watch destriers being paraded before their prospective purchasers.[301] In

1232 Henry issued orders to buy three horses from Lombardy which were for sale in

London, and these may have also been located at Smithfield which continued to hold

a horse fair every Friday.[302] Evidence that London remained a focal point for

warhorse sales can be found in Prince Edward's household accounts in early 1303.

At that time preparations for a new campaign in Scotland were underway and the

prince instructed the knights Guy Ferre and Sir W. Reginaldi to travel to London to

buy destriers and rounceys 'for his riding in the Scottish war'.[303] Accompanying them

were two unnamed sergeants whose job was to 'run the horses', which suggests that

they rode them to test their temperaments and training before purchases were made.

These horses may have been purchased in one of London's fairs, or from one of the

Italian merchant companies that had set up trading bases in the city.

One such company was run by the Gallerani of Siena. This Italian company

had a branch based in Walbroke, London, and from here they traded in elite horses

alongside other merchandise such gems, sweets, and wool. In the early fourteenth

century they supplied horses to the Earl of Gloucester and to Andrea d'Agoni, Henry

Lacy's marshal.[304] The company sold a horse to Aymer de Valence to ride in a

tournament held at Dunstable in January 1306, and sold him another, this time a bay

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[301] FitzStephen, III (1877), p. 6.
[302] *CCR*, Henry III, 1231-1234, p. 96; John Langdon, *Horses, Oxen and Technological Innovation: The Use of Draught Animals in English Framing from 1066-1500* (Cambridge: Cambridge University Press, 2002), p. 273.
[303] Bain, II (1884), p. 365.
[304] Derek Keene, 'Wardrobes in the City: Houses of Consumption, Finance and Power', in *Thirteenth Century England VII: Proceedings of the Durham Conference 1997*, ed. by Michael Prestwich, R. H. Britnell and Robin France (Woodbridge: Boydell, 1999), pp. 61-80 (pp. 72-73).

from Apulia, to ride in Scotland, presumably as a warhorse.[305] The Gallerani were

also on good terms with Piers Gaveston, and sold him a horse costing just over 95

livres tournois (approximately £24) on 5 June 1306. This horse had been purchased

from a Genoese merchant trading in Paris and indicates that the Gallerani had a

network of agents employed to source horses overseas. There was a high demand

for elite horses, so much so that in 1306 the Gallerani went into partnership with the

Frescobaldi in a 'Horse Joint Venture'.[306] By combining their capital and knowledge

of the international horse market, they provided a company that could source the

types of horses needed by royalty and members of the nobility. The profit margins on

warhorses were lucrative. The Gallerani made a profit of around 23 per cent per

horse, and under the joint venture, 18 per cent.[307]

London's prominence as a centre for the English market in elite horses is also

documented in March 1315. During this month the Toulouse brothers (who had been

commissioned by Edward II to purchase horses from Spain a few years earlier), can

be found in the city buying 21 horses for the king.[308] Nineteen of these horses are

described as *chivaux* (the medieval French equivalent to *equi*) and the prices paid

for each horse ranged from £20 to £75. Two of these were purchased from Walter

Matthieu of Caen, a merchant who went on to source warhorses for Edward two

years later; one is recorded as owned by one of Sir John Comyn's knights, and

several others were bought from sergeants from France, Gascony, and Aquitaine.[309]

The remaining two horses comprise a dark bay courser worth £26 5s and the most

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[305] Georges Bigwood and Armand Grunzweig, *Les livres des comptes des Gallerani*, 2 vols (Brussels: Palais des académies, 1961-1962), II (1962), p. 228.

[306] Christopher W. Nobes, 'The Gallerani Account Book of 1305-1308', *The Accounting Review*, 57 (1982), 303-10 (pp. 305-07).

[307] Nobes, p. 308, fn. 13.

[308] TNA, E101/99/20, m. 4.

[309] *CPR*, Edward II, 1317-1321, p. 60.

expensive horse, a grey roan destrier that is valued at £75 and is listed as belonging

to Sir John Comyn, although the knight had died at the Battle of Bannockburn the

previous year.[310] The reason the knight's destrier had ended up for sale in London

may have been a practical one: Comyn's heir was only a child at the time of his

father's death and the executors of the estates must have decided there was little

point in keeping a warhorse. Were some of the other horses bought by William and

Pons Toulouse also relics of the ill-fated Scottish campaign of 1314? Troops of men

from France, Gascony, Poitou, Aquitaine and Bayonne are described as being

among the English army in John Barbour's chronicle *The Bruce* (written *c.* 1375), so

it is possible that some had fought on the campaign and afterwards made the

decision to sell their horses to avoid the expense of shipping them back abroad.[311] It

was certainly not unusual for this to take place: in 1327 John of Hainault sold all his

retinue's horses to the English Crown after the Weardale campaign, and later in

1352 at the end of the expedition in France some English men-at-arms handed over

their warhorses to the constable of Bordeaux before returning to England,

presumably as part of a sale agreement.[312]

Buying warhorses at the end of a campaign certainly made sense as these

horses had already been tried and tested in the field and would have been useful

additions to the royal stables. Some may have been handed over to members of the

household or given as gifts – three of the Hainault horses were given to John of

Reynton, Abbot of Rievaulx, as compensation for having lost all his own horses in

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[310] Phillips, *Edward II*, p. 234. John's son, Aymer, died two years later in 1316.

[311] John Barbour, *The Bruce*, trans. by A. A. M. Duncan (Edinburgh: Canongate, 1997), p. 409.

[312] Ayton, p. 42.

1326 by riding them hard between London and Scotland on diplomatic missions.[313]
These horses must have broken down or died from exhaustion, and this
demonstrates that sometimes horse welfare was of secondary importance when it
came to carrying out matters of State in times of war.

Although the Toulouse brothers were employed to find horses for the king
there were protocols to follow before they could be officially handed over and paid
for. Under the supervision of the king's marshal 16 out of 21 horses sourced by the
merchants were approved for the royal stables. The remaining 5 were rejected as
being unsuitable although the reasons why are not given, perhaps they were
considered too worn out or of poorer quality. The assessment of the horses was
carried out by two royal officials, the king's steward, William Montague, and Henry le
Mareschal. This pre-purchase inspection would have entailed inspecting the horses
for signs of lameness and disease, and it is likely that the horses would have been
ridden to check their training and temperament. The process was witnessed by four
'good and loyal men' comprising of two prominent London merchants named William
Trente and Henry Nasard, John de Lukes (the king's serjeant in arms) and
Dominique Roncevaux. The latter was almost certainly the same Navarrese horse
dealer who had sourced Spanish horses for the king some years previously. There
appeared to be some haggling over the horses' prices: several had their valuations
lowered, including the horse belonging to Comyn's knight, which was reduced by £7
10s to £50.

Once a final sum had been agreed a written testimony was drawn up
confirming the agreed sum. Only then were the animals handed over to the care of

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[313] TNA, SC8/69/3430. The petition is dated 1334 and relates to the final year of Edward II's reign. The remainder of the Hainault horses were sold to help pay for repairs to Dover castle, see TNA, SC8/174/8676.

Adam de Bray, keeper of the royal horses.[314] Payment to William and Pons Toulouse was issued in the form of a bill sealed by the king's clerk which could be presented to the Exchequer for payment. However, receiving the money from the royal coffers could take a considerable amount of time: the London merchant Peter Cabanus had sold the king 12 horses for £376 in October 1313, but half the debt was still unpaid three years later.[315]

Independent horse dealers also operated in major towns such as London and York. Some of their names and activities can be gleaned from chancery documents concerning non-payment of debts. Much of the horse trade, especially in high-value animals, relied on a similar system of credit offered by merchants of other goods such as cloth and wool.[316] This system offered the benefit of securing sales even when ready cash was in short supply, and both parties could agree on a future date for payment. Wool merchants typically offered credit facilities for three to six months and similar policies were probably followed by horse dealers.[317] However, Peter Cabanus was not the only London dealer to find that collecting debts on time could prove difficult. A similar problem was faced by Roger de Flem', another London-based supplier of horses who was active in the 1290s. Roger had to resort to the courts on more than one occasion to pursue clients such as Sir William Grimbald, a knight from Surrey, and Sir Edmund Foliot, who owed £33 and £10 respectively for

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[314] William Montagu, 2nd Baron Montagu served under Edward I in the Welsh and Scots wars and took part in a tournament at Dunstable in 1309. As such, he was eminently qualified to judge horseflesh.

[315] *CPR*, Edward II, 1313-1317, p. 302. William Toulouse also had occasion to pursue Edward II for payment: two years earlier he had been forced to write to the king to remind him that he had still not been paid for the sale of 13 horses (see TNA, SC8/219/10943).

[316] For further reading on the use of credit see A. Bell, C. Brooks and T. Moore, 'The Non-Use of Money in the Middle Ages', in *Peter Spufford's Money and its Use in Medieval Europe - Twentyfive Years On*, ed. by N. Mayhew (London: Royal Numismatic Society, 2017), pp. 137-151.

[317] Edwards, *The Horse Trade of Tudor and Stuart England*, p. 18.

horses purchased from the dealer. Grimbald had fought in the second Welsh war on a £30 horse and Foliot had served as a knight in Sir Thomas Furnival's retinue in 1298 on a £10 *equus*, and this suggests that some of Roger's trade was in warhorses.[318]

In the North, a York-based dealer named John Grantham is recorded as pursuing Sir Ralph Fitz William for a debt of £13 owed for a horse sold to the knight in 1290.[319] Two merchant brothers named Gawayn and Ruffinus Farrar' can also be found claiming for a similarly priced horse sold in 1301 to another Yorkshire knight, this time Sir Marmaduke of Thweng (1st Baron Thweng). Thweng was active on the campaigns of Edward I, serving in Wales, Gascony, and Scotland, where he was one of the few horsemen to escape at the Battle of Stirling Bridge but was later taken prisoner at Bannockburn [320] The type of horse sold is not recorded, but it may have been for Thweng to ride in the campaign that commenced later that year.[321] For horse dealers, there was a thriving trade in warhorses during periods of conflict, especially as horses were frequently lost and needed replacing. In 1318 Espandus de Arraux received a payment of just over £108, some of which was for replacing mounts lost from the garrison of Berwick-on-Tweed. These horses were handed over to John Page, the king's sergeant-at-arms, who was no doubt responsible for allocating them to various members of the retinues stationed there. In the same year, Edward II instructed his bankers to pay the merchant Wolpinus Johan £93 12d., a

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[318] TNA, C241/2/126; C241/2/129; for Grimbald on campaign see C47/2/7, m. 1; for Foliot see Gough, p. 211.
[319] TNA, C241/1/14.
[320] TNA, C241/35/263; *Parl. Writs*, I, (1827), p. 226; Andrew M. Spencer, 'John de Warenne, Guardian of Scotland, and the Battle of Stirling Bridge', in *England and Scotland at War, c.1296-c.1513*, ed. by Andy King and David Simpkin (Leiden: Brill, 2012), pp. 39-52 (p. 49).
[321] Some destriers could be valued as low as thirteen pounds. For example, Hugh Poyntz is recorded as possessing one of this value in the 1298 campaign: Gough, p. 215.

large portion of which was owed for providing horses to replace those lost by William de Dishforth and his retinue whilst serving at Edinburgh castle.[322]

Sales of Royal Stock

Some knights were fortunate enough to not have to buy their warhorses if they were the subject of royal favour. Sometimes Edward I and Edward II gifted horses at the start of a campaign. On the eve of the second Welsh war in 1282 Edward I gave away 36 horses to various members of his household: John Botetourte, who went on to serve at Flanders, Falkirk and Caerlaverock, received a horse named Morel de Tartas; William Fitzwarin, former seneschal of Ulster, received a skewbald horse; Emory de Burgh received one called Bay de Champagne.[323] The name of Burgh's horse might suggest that it was one of the horses that Edward had purchased in the French fairs and been forced to reroute to England via the Netherlands. Not all the horses given away by the king at this time were destined for use as warhorses. Some are recorded as cart and sumpter horses, and this demonstrates that the king was able to supply all the types of horses that were necessary for a campaign. The inventories raised for 1282 show that in addition to these three dozen mounts, Eustace de Hache, Giles de Feres, and Richard de Boys were leading retinues on horses described as *de dono regis*, or gifts from the king. These were probably destriers or high value *equi* and may have been gifted as marks of favour.[324]

Men who were not in the fortunate position of receiving horses as gifts from the king could sometimes buy royal youngstock when they came up for sale. The

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[322] *CPR*, Edward II, 1317-1321, pp. 129; 160.

[323] TNA, C47/2/6, m. 2.

[324] Other men-at-arms who received high value horses as gifts from Edward I were Sir Richard Siward, Sir Simon Frasel, and Sir Thomas Lancaster (2nd Earl of Lancaster), and Lancaster's brother, Henry: Gough, pp. 163; 169; 173; 179.

periodic selling of surplus horses from the royal studs was a way of weeding out horses that did not meet the high standards set by royalty. In 1294 a total of 68 colts and fillies were sold from studs in Hawarden (Flintshire), Hope (Wrexham), Macclesfield (Cheshire), the Peak District, and Hampton-in-Ardern (Warwickshire).[325] The sales were supervised by William Wyth and Thomas le Mareschal, keepers of the king's horses, and Robert de Staundon, justiciar of North Wales. Most of the horses were juvenile female horses aged between one and three years old. They were sold for an average of 7s. 6d. each, and their low price probably reflected their age and gender. Some two- and three-year-old colts were also sold and these averaged 12s. 4d., indicating that colts were more desirable, perhaps because they could be eventually used as warhorses for men in the lower ranks. The best foals were sent to be sold at Woodstock, and all were colts ranging from two to four years old. These were of better quality, and this is reflected in their average sale price of £1 4s. each. Buyers of these colts included the nobility and men who were employed by the royal household: the Gloucester knight John Langeley (who went on to serve at Falkirk and Caerlaverock) purchased a pair of four-year-olds for £2 each; Sir Philip Everdon, the king's clerk, purchased 2 colts aged three and four, paying £4 in total; Walter de Sturton, Robert le Tailleur, and Master John Cocus each purchased between 1 and 3 colts. The latter three men can be found serving as paid men-at-arms in the Falkirk roll, where they are recorded as riding rounceys valued at around £5.[326] The sales list does not give details about horse colours or markings so it is impossible to know if the horses ridden by Sturton, Tailleur and Cocus were the same ones purchased at Woodstock, but it is a possibility: these horses would have

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[325] TNA, E101/97/26.
[326] Gough, pp. 174; 178; 232.

been aged at least six years of age in 1298, making them mature enough for warfare. The sale of royal youngstock offered valuable opportunities to buy colts that could potentially be turned into cavalry mounts. Due to their young age and lack of training they were inexpensive compared to the warhorses listed in the inventories, and although it would take several years for them to be mature enough for combat, they could be profitably used for breeding in the meantime.

Conclusion

This chapter has explained where warhorses came from by investigating the different ways in which they were acquired. The onset of war in England in 1276 and the lack of warhorses highlights the fact that aristocratic men-at-arms were unprepared for war. Their ability to import large numbers of warhorses from France reveals that this country was a nexus for the international trade in elite horses. Italian merchants, some of whom have been identified, dominated the trade in warhorses and were employed to act as agents for the English aristocracy. The ease with which warhorses could be sourced from overseas appeared to do little to stimulate an English market in warhorses. When a second war with Wales broke out in 1282, the English nobility turned once again to France as a source for mounts. However, a ban on warhorse exports by France brought home that the international warhorse markets could not be wholly relied on. This did not mean that warhorse imports ceased altogether - foreign horses would always remain a desirable commodity throughout the reigns of Edward I and Edward II - but the events in 1282 triggered an important turning point in royal attitudes towards the availability of warhorses in England.

The king's first method to ensure serving men-at-arms had suitable horses was to issue an order making it clear that the onus was on them to make sure they kept a warhorse at the ready. This helped to stimulate the growth of a small but lively warhorse market in England. London was the main location for warhorse sales, and this market was dominated by foreign merchants who were able to tap into their European networks to help supply horses to the English aristocracy. Individual horse dealers were also able to exploit the demand for warhorses by trading at fairs and setting up business in major towns including York. Edward's second method of maintaining warhorse numbers was to personally embark on an ambitious programme of breeding, the aim of which was to create a sustainable supply of warhorses for himself and his household.

Chapter Four: Breeding

The difficulties faced by the Crown in obtaining warhorses from overseas in 1282

was a watershed moment in royal attitudes towards horse breeding. The ban on

horse exports by King Phillip III of France prompted Edward I to revitalise the royal

studs in England and begin the serious business of breeding warhorses. Three years

previously France had put such a measure in place: all barons, abbeys, counts, and

dukes had been ordered to keep at least four to six broodmares on their estates to

assuage the shortage of warhorses.[327] A sign that the English Crown was taking

similar steps is suggested by the statute issued ordering landowners to keep a

warhorse available at all times, and the creation of a new set of records named the

equitium regis (royal stable) accounts. Formerly, the expenses of the royal horses

had been incorporated directly into the Wardrobe accounts, but the separation of

stud farms into their own fiscal sub-section suggests that breeding had become a

new focal point for the Crown. The implementation of the *equitium regis* accounts

offered two important benefits: expenditure could be closely monitored, and it

enabled detailed records to be kept of the whereabouts of the king's horses and the

numbers of breeding stock. This commercialised approach to breeding reflects the

implementation of a tightly controlled system designed to maximise the production of

elite horses. Key to production were the royal studs, establishments in which

selective breeding could be closely monitored.

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[327] Bautier, pp. 61-62.

The Royal Stud Network

The *equitium regis* accounts reveal that there was an extensive network of royal studs used to breed horses during the reigns of Edward I and Edward II. The exact number is difficult to ascertain due to the inconsistency of the records and the constant movement of studs in and out of royal control, but there were at least a dozen in operation at any one time. The main studs (those that were permanent features of the Crown throughout both reigns) were located in the south of England where they could be kept under close royal control (Figure 4.1).

Figure 4.1: Main stud locations under Edward I and Edward II. 1: Cornbury; 2: Woodstock; 3: Risborough; 4: Reading; 5: Windsor; 6: Odiham; 7: Guildford.; 8: Rayleigh and Eastwood. Google Maps (2023)

A nucleus of studs was located either side of the Chiltern Hills and North Wessex Downs. To the north lay the studs of Woodstock and Cornbury in Oxfordshire, and Risborough (now Princes Risborough) in Buckinghamshire. To the south were the Berkshire studs of Windsor and Reading, and also Odiham and Guildford (Hampshire and Surrey). Located further east were the Essex studs of

Rayleigh and Eastwood. These were located in two adjacent parks but by the reign

of Edward II were referred to jointly simply as Rayleigh. A common feature of many

of these centralised studs was their location on chalk or limestone soils, or their

proximity to chalk streams. These provided pasture and water supplies that were

high in calcium, a particularly important mineral for lactating mares and for the

development of bone growth in youngstock. Foals in these areas would have been

seen to thrive, so it is probably no coincidence that one of the largest royal studs,

Woodstock, was situated on lime-rich soil, or that Odiham, a nexus for raising royal

colts, was bisected by the River Whitewater, a chalk stream rich in calcium.[328]

      Many studs were also located in or near royal parks. These were areas that

served as royal hunting grounds but were also ideal sites for horse breeding as they

usually contained a mixture of woodlands and open pastures enclosed by park pales

(perimeter fences made of timber, banks or walls) which helped to prevent the

horses from straying.[329] The woodlands offered the benefits of providing shelter,

windbreaks, and shade during the winter and summer seasons, and were also

exploited for material to repair the pale or to build stables. At Odiham in 1324, a new

'house', or barn, was built for the king's colts by felling the old oaks in the park.[330]

[328] Information from Canbridge University, *LandIS Soil Data* (2023),
<https://www.landis.org.uk/soilscapes> [accessed 1 August 2023], *Chalk Rivers (England)*,
Defra (2023), <https://naturalengland-defra.opendata.arcgis.com> [accessed 1 august
2023]; Carly Ameen and others, 'Interdisciplinary Approaches to the Medieval Warhorse',
Cheiron: The International Journal of Equine and Equestrian History, 1, (2021), 99-119 (pp.
105-06). For the benefits of calcium for broodmares and youngstock see Tony J. Cunha,
Horse Nutrition and Feeding (Cambridge, MA: Academic Press, 2012), pp. 98-99.
[329] Stephen Moorhouse, 'The Medieval Parks of Yorkshire: Function, Contents and
Chronology', in *Medieval Parks: New Perspectives*, ed. by Robert Liddiard (Macclesfield:
Windgather Press, 2007), pp. 99-127 (pp. 114-15); Carly Ameen and others,
'Interdisciplinary Approaches to the Medieval Warhorse', p. 106; Ian D. Rotherham, 'The
Historical Ecology of Medieval Parks and the Implications for Conservation', in *Medieval
Parks: New Perspectives*, ed. by Robert Liddiard (Macclesfield: Windgather Press, 2007),
pp. 63-78 (p. 84).
[330] *CCR*, Edward II, 1323-1327 p. 94.

Some studs had been established well before the reign of Edward I and remained in continuous use as breeding centres well into the fourteenth century. Woodstock was recorded as a royal forest in the Domesday Book and was emparked during the reign of Henry I (1100-1135) using seven miles of perimeter wall.[331] It was used as a stud by Henry III, but all its stock of mares and foals was sold off in 1228, perhaps due to the need to raise finances for a planned expedition to France.[332] Under Edward I it became one of the major centres for royal horse production alongside another large stud located at Windsor. The latter is recorded as a royal Saxon hunting lodge and by the reign of Henry II it totalled 1364 acres, much of which was later used by Edward II to pasture his substantial herds of broodmares and youngstock.[333] In contrast, Risborough was a relatively late acquisition to the royal household, only coming into the hands of Edward I in 1300 on the death of his cousin Edmund, 2nd Earl of Cornwall.[334]

There were several other breeding locations outside of the nucleus of royal studs in the south, but due to the inconsistent nature of the sources some make only a fleeting appearance in the records. For example, during the reigns of Edward I and Edward II a royal stud was located at Haverah Park in North Yorkshire but only a single record of its existence has survived in the *equitium regis* accounts. This is

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[331] *Woodstock and the Royal Park: Nine Hundred Years of History,* ed. by John Banbury, Robert Edwards, and Elizabeth Poskitt (Oxford: Chris Andrews Publications, 2010), pp. 7-8; Amanda Richardson, '"The King's Chief Delights": A Landscape Approach to the Royal Parks of Post-Conquest England', in *The Medieval Park: New Perspectives*, ed. by Robert Liddiard (Macclesfield: Windgather Press, 2007), pp. 27-48 (p. 28).

[332] 'Fine Roll C 60/27, 12 Henry III (1227–1228): Membrane 9', *Henry III Fine Rolls Project* (2023); Simpkin, p. 14.

[333] Richardson, '"The King's Chief Delights": A Landscape Approach to the Royal Parks of Post-Conquest England', pp. 27-48 (p. 28); TNA, E101/99/27, m. 2.

[334] *CCR*, Edward I, 1302-1307, pp. 279-80.

despite the fact it was still operating as a breeding location under Edward III.[335] Aside from the loss of some accounts, other studs may not have been recorded if they were considered only temporary acquisitions gained by the Crown though various circumstances such as escheat or wardship. For example, when John de Warenne, 6th Earl of Surrey, died in September 1304 his estates were handed over to the king's escheators until his nominated heir (then aged eighteen) could formally assume the title when he reached his majority at the age of twenty-one. The prince, later to become Edward II, was quick to take advantage of Warenne's death by using the late earl's parklands in Ditchling, Sussex, as grazing land for his stud of horses.[336] In some cases 'temporary' could mean decades. When Guy Beauchamp, 10th Earl of Warwick, died in 1315 his heir was only two years old. The earl's studs were handed over to royal control, including one attached to Barnard Castle in County Durham. In December 1326, over a decade later, the castle's constable can still be found in charge of paying the wages of Gilbert Riot, listed as in charge of the king's stud there, but this breeding location does not appear in the *equitium regis* accounts.[337]

Edward I and Edward II seized every opportunity to increase the number of royal studs and breeding stock: in 1300 on the death of Sir John Wake, 1st Baron of Liddell, Cumberland, the king's escheators seized 39 horses from Wake's stud despite his heir being placed in the wardship of Henry, 3rd Earl of Lancaster; in 1302 on the death of Richard Fitzalan, 1st Earl of Arundel, part of the debts he owed to the Crown were taken in the form of horses from his studs in Oswestry and Clun in

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[335] TNA, E101/99/27. Earlier references to Haverah park can be found in *CCR,* Henry III, 1227-1272, p. 8. Haverah was still part of the royal stud network in 1350: *CPR*, Edward III, 1348-1350, p. 472.

[336] *CCR*, Edward I, 1301-1307, p. 245. In total, the prince was granted parkland, chases and pasture in Ditchling, Sussex, and Reigate, Surrey, to the value of thirty-eight pounds and sixteen shillings per annum.

[337] *CCR*, Edward II, 1323-1237, pp. 622-23.

Shropshire; in 1311 Edward II arranged to repay the debts he owed to Italian

bankers by handing over the estates of the late Antony Bek, Bishop of Durham, but

first made sure to retain for himself all the breeding horses in the bishop's studs.[338]

Studs were sometimes acquired as a result of conflict: as a result of Edward II's

victory over his rebellious barons at the Battle of Boroughbridge in 1322 many of the

opposition's estates were seized. Those belonging to Humphrey de Bohun, 4th Earl

of Hereford, were forfeited to the Crown, and his studs at Hatfield Broad Oak, Writtle,

Pleshey and Apechild (the latter is now Absol Park) in Essex were absorbed into the

royal stud network.[339] Alternatively, some studs were handed to others as a sign of

royal favour: as the king's loyal supporter Hugh Despenser the younger was given

several castles, towns and 'the king's stud and all the king's stock' in Huntington and

Hay-on-Wye on the Welsh border, and also the Lordship of Brecknock which

included several studs in the historic county of Brecknockshire in southern central

Wales.[340] The regular additions and subtractions of studs from the royal network

mean that the exact number of studs in use by the Crown at any one time remains

uncertain, but it was certainly higher than the *equitium regis* accounts alone suggest.

What is clear is that these stud farms were considered valuable assets and that the

breeding of horses was an important feature of Crown policies.

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[338] Bain, II (1887), pp. 291-292; *CCR*, Edward I, 1296-1302, p. 513; *CPR*, Edward II, 1307-1313, p. 332.
[339] *CPR*, Edward II, 1324-1327 pp. 244; 322.
[340] *CCR*, Edward II, 1318-1323, p. 618. The Brecknockshire studs were located at Brecknock, Cantrecelyf, Talgarth, Blaenllynfi and Pencelly. For accounts of the Essex studs formerly owned by Bohun see TNA, E101/99/27.

Stallions

Royal breeding was of course dependent on the possession of good quality horses.
The *equitium regis* accounts separated breeding stock into three main categories:
stallions, mares, and youngstock. Each of these groups of horses was managed
differently according to a strict set of rules that governed their movements, daily
care, the times of year mares were bred, and the dates that youngstock were
separated for training. The most important horses in the studs were the stallions and
this is reflected in the accounts. Keepers always reported the number and expenses
of stallions before addressing other horses, and stallions were also managed
differently from other horses, being kept permanently stabled and attended to by
teams of grooms. The origin of these breeding stallions is not always supplied by the
records, but occasionally they are identified by name, or a note was added to the
accounts indicating from whence they came. Some were drawn from the king's
stables and were seasoned campaign horses: Ferrand de Bek is listed among the
destriers taken on campaign with Edward I during the second Welsh war and can be
found standing at the stud at Woodstock several years later; another of the royal
destriers, this time a black stallion stationed with the king at Berwick-on-Tweed in
1296, was relocated to Woodstock where it spent several months serving the mares
there before being returned to duty.[341] The dual role of stallions as warhorses and as
breeding males means that many of those imported in the early years of Edward I's
reign were likely to have been used as foundation sires, and would therefore have
supplied the underlying genetic base for future warhorse populations. Using tried and
tested warhorses as breeding animals was profitable as they had already proved
their aptitude for warfare and would pass on their qualities to their offspring.

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[341] TNA, E101/97/13, m. 1; E101/97/12; E101/97/27, m. 4.

Laurentius, who drew parallels between human and equine reproduction, made this point, explaining that the choice of a stallion was important as 'from a good and beautiful father a good and beautiful son is wont to be born, and vice versa from a bad one'.[342] However, the demand for warhorses in a period of almost continuous campaigning meant that breeding stallions were not always readily available.[343] This dearth was felt in 1306 when Prince Edward took over the Earl of Surrey's studs and was obliged to ask the Archbishop of Canterbury if he could spare him a breeding stallion to use due to 'the great lack of stallions' at that time.[344]

To ensure that royal studs had a sufficient number of entire male horses at their disposal other sources were exploited. One avenue for gaining stallions was through escheat or forfeiture, especially if the former owners of the horses were prominent military leaders who would have been invested in producing warhorses themselves. Hence royal instructions concerning the requisition of horses from the stud farms of the late Anthony Bek were explicit in demanding that all the 'stallions, mares, and foals' were to be seized.[345] Bek's military obligations had seen him serve in Wales and Scotland, so a key feature of his studs was the breeding of warhorses. Some of the Bishop's destrier stallions were sold or given away as gifts to the king: Ferrand de Bek was ridden in the Welsh campaigns by Edward I and Morel de Bek was the resident stallion on the studs at Eastwood and Rayleigh 1293-1295.[346] Similarly, the forfeiture of the Bohun estates some years later provided an opportunity to increase numbers: one stallion was taken from Bohun's stud at Writtle

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[342] Laurentius Rusius, p. 6, 'Quia ex bono et pulchro patre bonus et pulcher consuevit filius generari, et e converso ex malo'.
[343] For example, almost a third of the destriers in 1298 were listed as either having died or been incapacitated during the campaign: Gough, pp. 161-237.
[344] Letters of Edward Prince of Wales 1304-1305, ed. by Hilda Johnstone (Cambridge: Cambridge University Press, 1931), p. 36. 'Graunt defaute destalouns'.
[345] CPR, Edward II, 1307-1313, p. 332.
[346] TNA, E101/97/13, m. 1; E101/97/18.

and another was removed from Pleshey. Both these horses were then promptly sent to cover the royal mares at Risborough.[347] Occasionally the records indicate that a stallion had been received from outside of the stud network: in 1320 Hugh Despenser the younger sent Edward II a skewbald destrier which was used to cover the mares at Cornbury and Risborough.[348] Whether this was a temporary loan or a gift is not indicated, but it does show that members of the nobility were also investing in elite breeding.

More commonly, future stallions were drawn from the ranks of youngstock conceived on the royal stud farms. For example, in 1316 two four-year-old colts can be found standing as stallions at Risborough; three years later they were joined by a grey colt aged two-and-a-half that had been sent from Odiham.[349] This is despite contemporary views that these were immature horses: the *equitium regis* records refer to all youngstock as foals until they reached five, while hippiatric authors also considered horses to not be fully grown until five years of age.[350] Laurentius warned that breeding from immature colts was unprofitable, and this was based on the belief that foals would inherit the physical form and attributes of their sires at the very moment of conception - immature colts would have 'neither well-formed nor solid limbs, nor perfect virtues', and as a result their progeny would likewise be born imperfect and weak.[351] Despite hippiatric concerns, it is evident that royal studs did not preclude the use of younger colts as sires. This suggests a divergence between practice and hippiatric ideals but may also reflect that pressures to produce

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[347] TNA, E101/99/27, m. 11.
[348] TNA E101/99/27, m. 4.
[349] TNA, E101/99/23, m. 1; E101/99/27, m. 2.
[350] For example, the arrival at Risborough in 1324 of a breeding colt from Odiham is recorded as 'pullanus dextrarius sorbausanus pro stalone' (a red and white destrier foal as a stallion): TNA, E101/100/12, m. 1.
[351] Laurentius Rusius, p. 20. 'Nec membra bene completa nec solida, nec virtutes perfectae'.

adequate numbers of warhorses meant that on occasion it was necessary to breed them at a younger age.

Hippiatric authors offered no guidance as to when a stallion was considered too old to breed but evidence shows that on royal studs some stallions were very mature. Ferrand de Bek, the horse which had been on campaign in 1282 is recorded as one of the stallions at Woodstock ten years later.[352] Assuming this stallion was at least five years old during the second Welsh war it would have been in its mid-teens by 1293. According to Jordanus, a well-cared-for horse could be ridden up to the age of twenty, so it may not have been considered unusual for horses in their second decade to still be in work - whether that was on campaign, competing in tournaments or performing stud duties.[353] Ferrand de Bek did not appear to be considered an old horse by stud standards as elderly animals are clearly identified in the records. For example, Baucan de Gloucester, a destrier at Knowle, is described as 'old and very feeble', and the bay destrier that died of disease at Risborough on 8 October 1318 was described as 'very old with bad feet'.[354] The records do not give their exact ages, but according to Pliny the elder (c. 23-79) a horse at Opus was still breeding at the age of forty, although it had to have help lifting its fore-end to mount a mare.[355] Not all horses were kept until they reached the end of their natural lifespans. Bayard de Tache, a stallion that had stood at Knowle in 1291 and at then at Woodstock until 1295, was eventually sent to the Hospital of Saint John the Baptist in Oxford as a gift. Accompanying him were two mares, one of which was given with the caveat that

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[352] TNA, E101/97/12, m. 3.

[353] Jordanus Rufus, p. 10. Today, senescence is generally thought to begin once a horse reaches the age of fifteen. For more information on aging and its effect on equine performance and reproduction see Catherine McGowen, 'Welfare of Aged Horses', *Animals,* 1 (2011), 366-376, <10.3390/ani1040366>.

[354] TNA, E101/97/6; E101/99/27, m. 2, 'Vet' et valde debil''; 'vet' valde cum malis pedibus'.

[355] Pliny the Elder, *The Natural History*, trans. by John Bostock and H.T. Riley (London: Taylor and Francis, 1855), 8.66. <http://data.perseus.org> [accessed 28 May 2023].

it was for the hospital's lepers.[356] These horses would have made valuable charitable gifts, and they were probably sold on to generate funds for the institution.[357]

The stallions were put to work throughout the breeding season. This period was referred to as *tempore saltatoris* (the time of mounting) and began in early April when the mares began their seasons (cycles of ovarian activity) and ended around July. This was well before mares typically end their cycles in October, but it was carefully timed so that so their foals would be produced eleven to twelve months later in the spring and summer months when grass was most abundant.[358] That the window of opportunity to breed was considered critical is expressed in the letter sent by Prince Edward to the Archbishop of Canterbury in 1306. Dated 16 June, it asks for the loan of a stallion 'as quickly as possible, as the season is passing'.[359] Once spring arrived the stallions that had been designated as breeding stock began to be moved into or around the stud network. Those that had spent the winter of 1315 in the king's stables at Osney, Oxfordshire, were sent out to various locations. On 12 April two left for Cornbury and two for Woodstock; a little later another was sent to Risborough. These horses stood at stud for several weeks before being returned to Osney, presumably to resume their usual duties as royal horses. During this time they were expected to each mate with around 12 or 15 mares: at Woodstock 2 stallions covered 31 mares over a period of 38 days; another pair of stallions at Cornbury covered 24 mares over a period of 48 days.[360] To ensure conception, each

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[356] TNA, E101/97/27 m.1.
[357] When Bolton priory received a destrier as a mortuary of Lady Neville this was immediately put up for sale: Kershaw, *Bolton Priory: The Economy of a Northern Monastery 1286-1325*, p. 105.
[358] For example, two stallions were sent to Cornbury on the twelfth of April 'per tempore saltatoris': TNA, E101/99/23, m. 1.
[359] *Letters of Edward Prince of Wales 1304-1305*, p. 31. 'Plus en haste que vous poez, pur ceo que la sesoun passe'.
[360] TNA, E101/99/23, m. 1

mare was probably mated several times. Keepers of the smaller studs such as

Hampton in Arden considered that a single stallion was sufficient to successfully

cover the 10 mares in the stud in 1293, but this appeared to be the maximum limit for

a single stallion. There were 13 mares at Rayleigh at that time, and 2 stallions were

brought in to serve them.[361]

It was royal policy to periodically move the stallions around various studs once

the breeding season began. As previously mentioned, Bayard de Tache was at

Knowle before being relocated to Woodstock, and this latter stud sometimes

exchanged its stallions with those at nearby Hampton in Arden: Bayard de Tache and

Blanchard de Bek were moved from Hampton to Woodstock in 1291, and Morel de

Ber left Woodstock for Hampton in 1293.[362] The reason for moving stallions around

the stud network was to prevent them from inbreeding with their own progeny. As

many mares and stallions were drawn from the studs' supply of youngstock there

was always the danger of breeding males covering their own dams or foals.

Hippiatric authors dealt with issues of consanguinity by advising that colts should be

removed from the herd once they reached the age of two lest they enjoy 'the

pleasure of natural intercourse with their mother', but with large numbers of horses

spread across multiple locations, the only feasible way to keep track of breeding was

to keep a register of which stallion had covered which mare, and when and where

this occurred.[363] Unfortunately no such documentation has survived the passage of

time, but one of the Woodstock accounts is unusual as it documents only arrivals,

departures, and expenses of stallions in the stud.[364] This is subsidiary to the main

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[361] TNA, E101/97/12.
[362] Gladitz, p. 168.
[363] Jordanus Rufus, p. 5. 'Delectionem coitus naturalis cum matre'. It is normal practice on modern commercial studs to keep these kinds of records to manage breeding stock, estimate foaling dates, and to evaluate breeding performance.
[364] TNA, E101/97/22.

corpus of accounts that typically list every horse in each location, and it may have

formed part of a separate set of registers designed to keep track of breeding. Lists of

matings (which may have accompanied such stallion accounts) would not

necessarily have been a matter for the Exchequer due to their non-financial nature,

and this might account for their exclusion from the *equitium regis* records and their

eventual loss.

The main corpus of accounts kept by keepers such as Wyth offers much

information on how stallions were cared for during their time at stud. These reveal a

twenty-four-hour regime of management designed to optimise the health and

security of each of the royal male horses. Each stallion was attended to by its own

groom who was paid 2d. to care for their charges 'day and night'.[365] Responsibilities

involved making sure the horses received a daily measure of hay supplemented with

grain.[366] Oats were the primary feed for medieval horses as this type of grain had

several benefits: it was widely grown and remarkably tolerant of drought and wet

conditions, and it was also a palatable and easily digestible grain with a high energy

content.[367] Stallions on the royal studs were each typically fed a half bushel every

day.[368] Medieval grain was measured by volume and a bushel of medieval oats could

vary in weight. A statute to regulate grain measures was introduced in 1301 and

stipulated 8 gallons to the bushel (with 4 pecks in a bushel and 8 bushels in a

quarter), so by using a conservative estimate of 12 kg to the bushel the king's

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[365] For example, TNA, E101/97/22 'P[er] diem et nocte[m]'.
[366] For example, TNA, E101/97/22.
[367] Bruce M. Campbell and Cormac Ó Gráda, 'Harvest Shortfalls, Grain Prices, and Famines in Preindustrial England', *Journal of Economic History*, 71 (2011), 858-86 (p. 863).
[368] Although most destriers received half a bushel (two pecks) of oats per day, Bayard la Tache received a peck (4 lbs) extra each night (TNA, E101/97/22). This horse may have been larger than the average destrier, or perhaps was a 'poor doer', one that struggled to maintain its weight and needed extra rations.

stallions each consumed 6 kg of oats every day.[369] This provided approximately

28,000 calories per day and by modern standards, this would be sufficient to meet

the energy requirements of a horse in hard work such as a racehorse or eventer.[370]

Modern calculations are based on the knowledge that to maintain condition a horse

must consume between 2 per cent and 2.5 per cent of its body weight in food each

day.[371] Using conservative calculations, if a destrier was between 143 cm and 153

cm in height and weighed in the region of 450 kg, it would have needed a daily ration

of approximately 10 kg of food split between fibrous forage such as hay and energy-

rich grains such as oats.

The ratio of forage to hard feed is determined by the workload of a horse and

the number of calories it needs to consume to maintain its condition. A horse

receiving no work can meet most of its calorific requirements through hay and grass

alone, but one in hard work (the equivalent to a modern high-level competition horse)

would need around 50 per cent of its ration to be made up from grain to meet its

calorific requirements. The amount of oats fed to the king's breeding stallions falls

into the latter category and this implies that these horses must have been very active

during the breeding season, perhaps covering each mare on several occasions to

ensure that conception had taken place. Ordinary horses received much lower oat

rations: carthorses on demesnes received between one-half to two-thirds of a peck a

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[369] The statute for weights and measures ('tractatus de ponderibus et mensuris') is reproduced in *Statutes at Large from Magna Carta to the End of the Reign of Henry the Sixth*, ed. by Owen Ruffhead, 9 vols (n. pub: London, 1763-1800), I, (1763), p, 148 <https://archive.org/details/statutesatlarge> [accessed 2 November 2023].

[370] For the calorific values of livestock oats see ''Oats', *INRAE-CIRAD-AFZ Feed Tables: Composition and Nutritive Values of Feeds for Cattle, Sheep, Goats, Pigs, Poultry, Horses, and Salmonids* (2021) <https://www.feedtables.com/content/oats> [accessed 2 November 2023]. These relate to modern oats and not medieval varieties (which may have had more or less calorific value), but it serves to give an indication of the levels of nutrition given to warhorses.

[371] For an authoritative work on horse feeding see David Frape, *Equine Nutrition and Feeding*, 4th edn (Hoboken: Wiley-Blackwell, 2010).

day (1.5 kg to 2 kg).[372] An explanation for the comparatively large amounts given to

royal stallions was that they were larger than ordinary working horses, most of which

were only around 133 cm in height.[373]

In addition to oats stallions also received a portion of bran. This is the fibrous

husk of cereals such as wheat that are removed during the milling process. Bran is

usually recorded by price rather than quantity, making it difficult to calculate the

volumes fed, although colts at Woodstock were fed a ratio of 2:1 oats and bran, so

these may have been the standard proportions.[374] When bran was unavailable horse

bread was used as a temporary substitute: at Woodstock in 1294 three bushels of

mixtil (a flour made from a mixture of wheat, barley and rye) were purchased to bake

the bread for the resident stallions.[375] In the summer months a *falcatore*, or mower,

was paid a penny a day so the stallions could enjoy freshly cut grass instead of hay.

The variety of feed stuffs demonstrates that the provision of suitable nutrition in the

form of fibre and energy-rich food formed an important component of stallion

management.

Concerns in maintaining the physical condition of stallions also extended to

the provision of prophylactic health care. This took the form of phlebotomy, or

bloodletting (Figure 4.2). Regular bleeding was recommended by hippiatric authors

as a method of preserve a horse's health. Jordanus recommended that it should be

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[372] John Langdon, 'The Economics of Horses and Oxen in Medieval England', *The Agricultural History Review*, 30 (1982), 31-30 (pp. 32-33); Bridgett Jones, p. 18. For further statistics on the amount of oats fed to horses on demesnes see John Langdon, 'The Economics of Horses and Oxen in Medieval England', p. 33.

[373] Prestwich, '"Big and Beautiful": Destriers in Edward I's Armies', pp. 5-6; Carly Ameen and others, 'In Search of the Great Horse: A Zooarchaeological Assessment of Horses from England (AD 300–1650)', p. 1250.

[374] TNA, E101/97/27, m. 1.

[375] TNA, E101/97/22. On the rare occasions oats were unavailable barley, dragum (a mixture of barley and oats), or peas were substituted, but these were always temporary substitutes until oats could be found. For examples of these feeds being fed to royal horses see TNA, E101/99/24, m. 1.

bled four times a year, in spring, summer, autumn and winter, and the favoured

method was to draw the blood from the vein in its neck.[376]

Figure 4.2: Horse undergoing phlebotomy, Italy, early fifteenth century. BAV, MS Vat Lat. 7228, Lorenzo Rusio, Hippiatria sive marescalia, fol. 44ʳ

Laurentius diverged slightly from Jordanus by suggesting that bloodletting

could be carried out three times a year: firstly in late April to combat the natural

increase in blood which if left untreated could cause itching or indigestion; secondly

at the beginning of September to help expel congested humours, and lastly in mid-

December to reduce the natural thickening of blood in the body.[377] It was important

to draw the correct volume so the horse was not overly weakened. According to

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[376] Jordanus Rufus, p. 10.
[377] Laurentius Rusius, pp. 88; 82.

hippiatric guidance, 3-4 lbs could be taken from a mature and healthy animal, but only 1-2 lbs from a foal or sickly horse due to their more fragile state. In England, stud keepers appeared to believe that it was sufficient to bleed a horse twice a year. At Woodstock, the stallions Bayard de Tache, Ferrand de Bek, Morel de Ber, and Morel de Crek were bled in August and December, and the procedure was considered important enough to warrant the hire of a horse doctor who travelled from Oxford to perform the procedure.[378] Such phlebotomies would have been unlikely to have had an adverse effect on the stallions' health: if 3-4 lbs of blood were drawn this would equate to between 1.5 and 2 litres of blood, or around 5 per cent of the total blood volume of a 450 kg horse – an amount small enough to not significantly weaken horses in good condition. The bleeding of royal stallions demonstrates that preventative health care was an important part of horse management, and it was designed to keep their bodies in peak physical condition.

These horses were kept permanently stabled throughout the breeding season so their health and wellbeing could be constantly monitored. Regular purchases of straw, candles, and lamps were made for their stalls and fresh water was in constant supply. At Knowle three buckets were bought to draw water for the stallions and at Woodstock 3s. 2d. was paid for a large cooking pot to use as a water trough.[379] It seems unlikely that the stallions were ridden during the breeding season and doing so would have run contrary to hippiatric advice. Jordanus recommended that they should receive little or no additional work other than their stud duties as if they were overexerted before or during coitus this could cause them to become

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[378] TNA, E101/97/11, mm. 5; 7.
[379] TNA, E101/97/11, mm. 1; 6.

heated. Consequently, the size and quality of their seed would be diminished, leading to smaller foals.[380]

The ability of stallions to produce male or female offspring was briefly addressed by Laurentius. He warned that stallions kept permanently confined needed to be carefully managed to ensure that they did not suffer from cold and moist humours. This could lead to difficulties in conception, or even if coitus was successful, the resulting foals would likely turn out to be fillies, 'for females are produced from cold and moist seed: from temperate, male'.[381] Whether the keepers of the royal stallions were concerned about the possible negative effects of keeping their charges permanently stabled is unknown, but it certainly offered some practical advantages. By preventing stallions from running with mares they would be less likely to suffer injuries from kicks and bites, and more importantly, it meant that selective breeding could be implemented. Evidence that this was carried out can be found in orders given in 1319 for an enclosure (*faldam*) to be made in the park at Risborough so that the mares in the stud could be mated.[382] This indicates that each mare was selected and brought out of the herd and corralled so that a stallion could be led in to mount her.

Accounts of John de Redmere, keeper of the king's horses in the 1320s, reveal that special halters fitted with reins were purchased for the breeding stallions.[383] This suggests that two men were employed to halter each stallion, and then lead it by holding a rein attached to each side of the horse's head. This is significant, for it suggests that these were powerful horses that needed extra

[380] Jordanus Rufus, p. 2.
[381] Laurentius Rusius*,* pp. 22; 24. 'Nam ex frigido et humido semine procreantur feminae ex temperato, masculi'.
[382] *CCR*, Edward II, 1318-1323*,* pp. 147-48.
[383] TNA, E101/100/12, m, 3. The term 'chevesins et reyn' is used to differentiate these items from the ordinary halters or 'capistra' also purchased in the same accounts.

methods of restraint to control them. At Woodstock a jar of grease was purchased 'for the work of the stallions', and this may have been used to lubricate the horses' penises before mating.[384] The use of enclosures and the purchase of special equipment points to a system of breeding that was carried out under strict human control. Breeding horses in this manner, rather than letting them run freely in natural herds, had certain advantages. It meant mating could take place safely without the chance of horses kicking and biting each other and it meant that the keepers of the studs could make certain that a mare had been successfully mated. It would also have facilitated the keeping of breeding records. This may have included the date of mating so that the expected foaling date could be estimated, and a list of which stallions had covered which mares. This made practical sense – it mitigated the chances of interbreeding and allowed officials to know which horses were profitably fertile.

This highly regulated system of breeding was a feature of the main royal studs, but different methods were applied in some of the peripheral locations such as Wales, Cumbria, and the Peak District. In Gwynedd stallions were left to run with herds containing up to 54 mares; the numbers at Hope in Flintshire were somewhat lower, with one stallion numbered amongst 21 mares.[385] Sometimes this more informal method of breeding caused problems, especially if other horses were agisted in the same location. In 1292 there appeared to be some difficulties in identifying which of the youngstock at Heydale in the Peak District belonged to the royal stud - 27 foals were branded but a note was added that it was not possible to be certain if a further 25 were the king's colts.[386] The difference between breeding

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[384] TNA, E01/97/22. 'Ad opus stalon''.
[385] TNA, E101/97/12, mm. 1; 2.
[386] TNA, E101/97/12, m. 1.

methodologies on the main and more remote studs reflected the types of horses being bred. The main studs were focused on breeding elite horses, whereas the others produced more ordinary horses such as rounceys.

Once the breeding season was over at the end of summer most stallions were returned to the royal stables and in some cases, were sent back out on campaign. Having spent several months serving mares this meant bringing them back into work, a process that could take several weeks. In 1294 Richard Foun can be found supervising the return to work of four destrier stallions that had been serving mares at Woodstock (Ferrand de Bek, Bayard de Tache, and two from Hampton-in Arden). The horses were freshly shod and new hobbles and bridles were purchased, and at this point, they were ridden - presumably to improve their fitness - by either Foun or grooms under his supervision.[387] At the end of September one of the stallions was dispatched to Wales.[388] This coincided with a fresh outbreak of hostilities in Wales and when the king arrived at Chester in December he would have found his destriers prepared and waiting for him. A similar process was put in place at Eastwood the following year: at the end of summer Foun supervised the purchase of surcingles, sweat scrapers, and hobbles for three stallions there, and these horses were then moved to London where they were handed over to the royal stables.[389]

Mares and Foals

Mares were a permanent feature of royal studs, unlike the stallions who for the most part were only resident during the breeding season. Jordanus gave mares

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[387] Today, hunters are traditionally given the summer off to recuperate after the hunting season and are then slowly brought back into work so they are fit enough to be hunted the following season.
[388] TNA, E101/97/22.
[389] TNA, E101/97/29, m. 1.

little consideration, only advising that they should not be too fat nor too thin as this

could affect the amount of space and nutrition available to their gestating foals.[390]

The view that mares were simply receptacles for the developing foetus perhaps

reflected Jordanus's somewhat old-fashioned views on generation. Laurentius,

writing a little later, believed that mares were as just as important as stallions when it

came to producing good stock. He drew parallels with human generative theory to

explain that it was necessary to have two good parents, for just as a good father

would beget a good and beautiful son, the same held true of the mother.[391] Both

hippiatric authors agreed that mares could begin their breeding careers from the age

of two, and this is reflected in English practice. Most of the broodmares were drawn

from the two-year-old female (filly) foals bred on the studs. Thus, in 1319 and 1320 a

total of 10 two-year-olds were selected from the herds of youngstock at Woodstock

and Cornbury to replenish the broodmare numbers in those locations.[392] These fillies

were probably considered to have the kind of conformation outlined by Laurentius:

large and strong bodies, long flanks, and good merit, or temperaments.[393]

　　Laurentius went on to advise that mares should be bred until they reached the

age of ten, at which point they were considered to have passed their physical peak

and were likely to produce foals that were 'feeble and slow'.[394] Despite this, royal

studs in England bred from mares well into old age: at Cornbury, Windsor, and

Rayleigh some mares are described in the records as being either old or very old; at

Woodstock a *vetus*, or elderly mare was recorded as having died of murrain whilst in

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[390] Jordanus Rufus, p. 5.
[391] Laurentius Rusius, p. 6.
[392] TNA, E101/99/27, mm. 2; 4.
[393] Laurentius Rusius, p. 8. The fate of the fillies not selected for breeding is unrecorded, but they may have been sold.
[394] Laurentius Rusius, p. 22.

foal.[395] Like some of the stallions standing at stud these mares may have been in their late teens or even older - fertility rates in modern mares decline around the age of fifteen but some can successfully produce healthy foals into their twenties.[396] Aristotle considered that mares aged thirty were exceptionally old, so the elderly mares on royal studs may have been a similar age.[397] They might no longer be fertile - a white mare, described as 'very old', was listed as having died of disease but was not recorded as being in foal - but they could still be profitably used as companions to newly-weaned foals. The advanced ages of royal mares suggest that they were used for breeding throughout their lifetimes, and although this ran contrary to hippiatric advice, it was likely driven by the pressure to produce adequate numbers of warhorses in a period of almost continuous campaigns.

The numbers of broodmares on the royal studs fluctuated depending on the size of the stud, the time, and the effects of disease. Smaller studs such as Hampton-in-Arden and Rayleigh rarely fielded more than a dozen mares, whereas larger venues such as Woodstock and Windsor contained around two dozen at any one time.[398] Opportunities to increase the number of mares were eagerly seized. An opportunity to acquire valuable breeding mares arose on the death of Richard Fitzalan, 1st Earl of Arundel, in 1302. Fitzalan had served in Wales, Gascony, and Scotland, and bred warhorses in his studs at Bromwich park near Oswestry and Clun, Shropshire. Fitzalan died owing the Crown the large sum of £1000 and royal

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[395] TNA, E101/99/27, m. 1.

[396] Patrick M. McCue, *Breeding the Older Mare*, Animal Reproduction Systems (2018), <https://www.arssales.com> [accessed 20 October 2023].

[397] Aristotle, *The Complete Works of Aristotle*, rev. edn, ed. by Jonathan Barnes, 2 vols (Chichester: Princeton University Press, 1984), I (1984), p. 903.

[398] For Rayleigh see TNA, E101/97/12; 29; Windsor: E101/97/12; Woodstock: E101/97/11; 9; 27.

escheators were ordered 'to retain for the king's use in part payment of the debt the better and more beautiful horses of the said studs'.[399]

Although Edward I can be credited with initiating a royal programme of warhorse production, his son Edward II was also a keen horse breeder. An early sign of the latter's interest is indicated in the letters of protection that were issued for the merchant William Persone in 1305 to travel to Lombardy to buy 'horses and mares' for the prince in 1305.[400] Edward II appeared to share Henry III's interest in horses from Lombardy as he made several attempts himself to import them: in 1309 the merchants Bynde and Phillip Bonaventure were sent there to buy 20 warhorses and 12 mares, and in 1318 Persone attempted to return to buy more for the king but was unable to reach the Lombard markets due to the dangers of the sea passage.[401] The horses from that region must have been considered to be of exceptional quality for such efforts to have been made to procure them. The acquisition of Lombard mares - which were no doubt intended for the royal studs - also suggests that the king intended to use them to help improve his stock. This is significant as it demonstrates that English attitudes towards generational theory were more closely aligned with Laurentius's views than Jordanus's – mares were believed to be as important as stallions when it came to the breeding of elite horses.

Edward II's focus on horse breeding is also highlighted by the multiple efforts made by the king to secure more mares. In addition to the stallions seized from the studs of the late Anthony Bek, the king was able to add to his studs 100 of Bek's broodmares and a similar number of foals.[402] This was despite the pressing debts

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[399] *CCR*, Edward I, 1296-1302, p. 513.

[400] *Letters of Edward Prince of Wales 1304-1305*, p. 165. 'Equis et iumentis'.

[401] *CPR*, Edward I, 1307-1313, p. 100; TNA, SC8/58/2898.

[402] *Registrum palatinum Dunelmense: The register of Richard de Kellawe, Lord Palatine and Bishop of Durham, 1311-1316*, ed. by Thomas Duffus Hardy (London: Longman, 1873), p. 524, <https://archive.org/details/registrumpalatin04rich> [accessed 12 Sept 2023].

owed by the Crown to the Ballardi merchants of Lucca, and such actions

demonstrate that for the king, the acquisition of breeding horses sometimes took

priority over the settlement of loans. These animals were valuable not only as

broodmares but also as diplomatic gifts: on 4 February 1316 Humphrey de Bohun,

4th Earl of Hereford, received 7 broodmares from the king, 2 of which came from the

royal stud at Woodstock and 5 from the one at Cornbury.[403] This gift was made only

a matter of days before Bohun was formally appointed to subdue a Welsh revolt led

by Llywelyn Bran and may have been an incentive or reward for taking up the

position.[404] Ironically, Edward II probably regained most of these horses when

Bohun's studs – which included 34 of the best mares - were seized after Bohun's

rebellion and eventual death at the Battle of Boroughbridge in 1322.[405] The studs of

Hugh de Audley, 1st Earl Gloucester, and his son (also Hugh) were also seized due

to their part in the same rebellion: 27 of their mares were added to the royal stud at

Rayleigh in 1323.[406] The king was also sometimes the recipient of gifts of

broodmares: in 1319 the military commander Aymer de Valence, 2nd Earl of

Pembroke, gave the king six pregnant mares to be used at royal stud at

Woodstock.[407]

The multiple acquisitions of horses made by Edward II through imports and

the seizure of studs suggest that the king was intent on expanding his breeding

operations. The numbers of broodmares on the royal studs certainly increased: at

Rayleigh the figures doubled to around two dozen mares, and at Woodstock the

numbers rose from 24 to around 32. The fragmentary nature of the documents

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[403] TNA, E101/99/23.
[404] Phillips, *Edward II*, p. 272.
[405] TNA, E101/99/27, m. 11; E101/99/27, m. 13.
[406] TNA, E101/99/27, m. 13.
[407] TNA, E101/99/27, m. 4.

means that it is difficult to track the numbers of horses in many of the royal studs

over a consistently consecutive number of years, but most locations likely had similar

increases. It might be expected that considering some of the large numbers of mares

obtained by the king the figures would be higher, but outbreaks of disease limited

expansion. This is discussed in more detail below, but firstly the management of

broodmares and youngstock will be addressed.

In contrast to the visiting stallions that were kept stabled and fed grain,

broodmares and foals spent most of their lives living outdoors at pasture. Pregnant

and lactating mares were expected to meet all their nutritional needs through

grazing, but in winter, when grass supplies were at their lowest, hay was fed as a

supplementary ration. At Woodstock the total amount spent on hay for mares in the

winter of 1312 was £5 1s.10d. This was fed for a total of 119 days from 16 October to

30 April and the daily ration per horse amounted to three-quarters of a penny.[408]' As

the studs' pasture land was reserved for the benefit of the horses, hay was

purchased from the surrounding farmlands and carted to the studs at a cost of 4d. a

day. Risborough was supplied by hay cut in nearby Winchendon, and Woodstock

sourced its supplies as far away as *Herdynton'* (Harlington, Middlesex) some 50

miles distant.[409] Only occasionally was hay fed to breeding stock outside of the

winter season: a drought in 1291 resulted in a lack of grass and meant that at

Knowle 28 foals were moved indoors for a month so they could be fed hay; at

Woodstock the situation was similar but the horses were fed outdoors - a boy was

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[408] TNA, E101/99/14, m. 3.
[409] TNA, E101/99/14, m. 4.

paid a penny a day for six weeks in June and July to carry the hay to all the mares and youngstock.[410]

Although stud records do not provide much in the way of details of how the broodmares were managed on a daily basis, the herds of mares and youngstock would have been rounded up for inspection several times a year. At Henry de Lacy's stud at Ightenhill in Lancashire the herd was gathered up three times a year. One roundup was to capture the foals so they could be broken or sold, and although the reason for the other two roundups is not given, it likely was to separate the foals for weaning or branding, and perhaps to bring the mares in to be mated.[411] On royal studs mares were brought into folds for covering when the stallions arrived each spring. The birth rate of royal mares at Rayleigh between 1294 and 1297 was 58 per cent; between 1318 and 1324 it rose slightly to 66 percent.[412] These figures are comparable with the average birth rate of 65 per cent on modern stud farms where horses are bred naturally.[413] This shows that the fertility rates of medieval stallions and mares on the royal studs must have been similar to modern horses, and that royal mares were kept in good condition with adequate nutrition.

Rates on some other medieval studs appeared to be lower: in 1295 only 45 per cent of mares at Henry de Lacy's stud at Ightenhill produced foals; at Bolton

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[410] TNA, E101/97/11, mm. 4; 5. For information on medieval climate see H. E. Hallam, 'The Climate of Eastern England 1250-1350', *The Agricultural History Review*, 32 (1984), 1984, 124-132 (Table 1, pp. 127-28).

[411] *Two Compoti of the Lancashire and Cheshire Manors of Henry de Lacy,* p. 72. In 1294 the hospital of St. Peter, York, was granted the right to keep two folds in the forest of Cumbria to round up and brand their mares and colts once a year: *Calendar of Charter Rolls, Henry III - Edward I, A.D. 1237-1300*, ed. by Henry Churchill Maxwell Lyte (London: HMSO, 1906), p. 443.

[412] TNA, E101/97/12; 29; E101/99/27.

[413] W. R. Allen and others, 'Reproductive Efficiency of Flatrace and National Hunt Thoroughbred Mares and Stallions in England, *Equine Veterinary Journal,* 39 (2007) 438-45 (p. 438).

priory, the birth rate was between 36 and 45 per cent; on demesnes the number was lower, with some manors such as Ivinghoe and Morton (Buckinghamshire) and Fletchamstead (Warwickshire) sometimes recording a complete absence of foals due to mares failing to conceive.[414] The birth rate of mares living in feral herds today is around 45-50 per cent so the horses at Ightenhill and Bolton priory may have been kept in similar conditions, unlike the carefully controlled breeding on royal studs. Factors such as disease and the reduction of fertility in older mares could also have lowered birth rates.[415] Other reasons for mares not conceiving were ably addressed by Walter of Henley in his agricultural treatise *Husbandry* (*c.* 1280), in which he recommended that 'if there be any [mare] which has no foal let it be inquired if it be by bad keeping, or want of food, or too hard work, or want of stallion, or because it was barren, that she bore no foal, and if she could have been changed for another in time and it was not done'.[416] Quality of care, adequate nutrition, and sufficient rest were therefore considered to be critical factors in successful conception, and the success rate of royal studs reflected both their high standard of care and the quick replacement of mares that had failed to conceive.

The records do not show that straw or other stable necessities were purchased for female horses, and this suggests that expectant mares were left to foal in the pastures. They were, however, kept under close supervision as keepers kept records of those that died whilst foaling (for example, four mares are recorded

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[414] *Two Compoti of the Lancashire and Cheshire Manors of Henry de Lacy,* p. 128; Kershaw, *Bolton Priory: The Economy of a Northern Monastery 1286-1325*, p.104; Jordan Claridge, 'The Role of Demesnes in the Trade of Agricultural Horses in Late Medieval England', 251 (2016), 1-17 (p. 10, fn. 42).

[415] Gail H. Collins and John W. Kasbohm, 'Population Dynamics and Fertility Control of Feral Horses', *The Journal of Wildlife Management*, 81 (2017), 289–96 (p. 292); U. S. Seal and E. D. Plotta, 'Age-Specific Pregnancy Rates in Feral Horses', *Journal of Wildlife Management*, 47 (1983), 422-49 (p. 422).

[416] Walter Henley, *Walter of Henley's Husbandry*, trans. by Elizabeth Lamond (London: Longmans, 1890), p. 65.

thus at Rayleigh and Woodstock in 1322 and 1324). Those that did foal successfully

gave birth to a roughly equal amount of male and female offspring: between 1318

and 1324 mares at Windsor, Woodstock, and Rayleigh gave birth to 374 live foals, of

which 49 per cent were colts and 51 per cent were fillies.[417] These foals remained

with their mothers for much of their first year and were probably separated for

weaning before the mares were due to foal the following spring. All youngstock were

branded so that they bore a permanent mark of identification in case of theft or

straying. In 1293 Master Thomas Marshal and Garcia of Spain were appointed to

brand all foals in Wales and the Peak District, and in the following year the new crop

of foals there was likewise marked. Documentary evidence of the equipment bought

for branding is rare, but 10d. was paid for a tripod and irons to brand the youngstock

on Henry de Lacy's stud at Higham, Lancashirel.[418]

Male youngstock were separated from female horses before they reached

sexual maturity. Jordanus advised that this should be done before colts were two

years old, as at this age they would naturally copulate with their mothers or some

other mare.[419] To avoid interbreeding, English royal studs followed suit by separating

their colts into bachelor groups. Guildford in Surrey was a regular destination for

colts in the 1290s and in 1325 was equipped with new stables to house the 20 colts

that the king intended to be received there each year.[420] Reading was also a

repository for young male horses, receiving 14 two-and-a-half-year-old colts in 1311,

and a further 20 the following year.[421] The main centre for colts, however, was

located in Odiham in Hampshire. The park there was unique in being kept not as a

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[417] TNA, E101/99/27, mm. 6; 11; 12.
[418] TNA, E101/97/12, m. 3; E101/97/19; *Two Compoti of the Lancashire and Cheshire Manors of Henry de Lacy,* p. 127.
[419] Jordanus Rufus, p. 4.
[420] TNA, E101/97/28; *CCR*, Edward II, 1324-1337, p. 280.
[421] TNA, E101/99/9; E101/99/14, m. 1.

breeding centre, but solely for the pasturing of young male horses.[422] There were

several practical benefits to keeping the colts in a single location: it meant that they

were easier to assess for their suitability as future royal horses, and it meant that

they could be handled and trained well away from the distraction of mares. Odiham

attracted colts aged between one and four years old from across the stud network

and their numbers fluctuated depending on the time and other factors such as

acquisitions from seized estates and deaths from disease. In 1294 there were 16

colts drawn from Woodstock, Rayleigh, and Windsor, the following year there were

10 in residence. Under Edward II the figures rose to 14 in 1311 and to an impressive

60 in October 1323, the latter numbers having been significantly increased by the

addition of colts taken from Humphrey de Bohun's studs.[423] These colts remained at

Odiham long enough to be assessed as to whether they were suitable for inclusion in

the royal stables. Those that met the criteria for potential warhorses remained at

Odiham until they were three years old and were then absorbed into the royal

stables to begin their formal training.

Death and Disease

Despite the care taken by stud keepers to manage the herds of broodmares some

losses were unavoidable. Deaths not caused by old age were attributed to murrain, a

catch-all term that referred to a wide range of equine sickness and disease. The

keepers of Woodstock recorded 6 mares lost to murrain between 1291 and 1296,

although 2 of these were noted as being very old.[424] At Windsor there were no

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[422] Carley Ameen, and others, 'Interdisciplinary Approaches to the Medieval Warhorse', p. 102.

[423] TNA, E101/97/28; E101/99/9, m. 3; E101/99/27, m. 11.

[424] TNA, E101/97/9; E101/97/27, mm. 2; 5.

deaths in 1295, but the following year several mares and a foal were recorded as having succumbed to sickness.[425] The names of the diseases are mostly left unrecorded, perhaps because such details were considered superfluous to financial accounts or the keepers were unsure as the origin of the illness. Only occasionally were they explicitly identified: in 1283 Henry the marshal can be found treating a destrier at Chester for farcy, a disease that Jordanus described as contagious and difficult to cure; on the stud of Knowle there were no deaths in 1291 and 1292, but in in 1293 honey, vinegar and plasters were purchased for a foal suffering from *strangulon*, a disease that hippiatric authors explained was caused by an excess of cold humours in the head.[426] A horse with *stranguillone,* or quinsy, is described as having swollen glands that could swell to the extent that it could no longer eat or breathe normally.[427] Early treatment consisted of draining the abscesses before applying plasters of bran boiled in wine, and then placing a wool covering over the horse's head to counteract the effect of the cold humours.[428] At Knowle hemp cloth was purchased to bind plasters to the afflicted foal, and a sheepskin was also bought, presumably to cover its head for the reasons described by Jordanus.

Although all retrospective diagnoses of equine diseases involve superimposing knowledge of modern animal pathogens on relatively unknown medieval diseases, it is tempting to draw parallels between hippiatric descriptions of *strangulon* and modern-day strangles, a contagious horse disease characterised by

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[425] TNA, E101/97/30, m. 3.
[426] For cases of farcy and 'strangulon' see TNA, E101/97/23, m. 11; E101/97/11, m. 2. For the hippiatric diagnosis and treatment of strangles see Jordanus Rufus, pp. 23-27
[427] Jordanus Rufus, pp. 30-31; Laurentius Rusius*,* pp. 110; 112. Laurentius recommended that a plaster made of bran boiled in wine should be applied to the horse's throat.
[428] TNA, E101/97/11, m. 3; Jordanus Rufus, p. 30. Jordanus's description of the disease corresponds to strangles, a disease that is still prevalent today and is characterised by enlarged glands in a horse's head and neck.

swollen glands and caused by the bacterium *streptococcus equi*.[429] Although

advances in veterinary medicine mean that today strangles is largely treatable, it can

still cause fatalities in around 10 per cent of cases.[430] Strangles is spread by direct

contact and shared drinking water, so it is probably unsurprising that at Knowle

shortly after one foal was diagnosed as having *strangulon*, a further three were

recorded as suffering from the same disease. Despite treatment, all four died and

were later recorded in the accounts as having succumbed to murrain.[431]

The occasional loss of mares and foals to disease can be seen throughout the

stud records, but steps were quickly taken to mitigate the impact on production.

Mares were replaced by fillies drawn from the ranks of two-year-olds, and with the

royal studs enjoying relatively good rates of conception foal numbers quickly

recovered. More serious were epizootic outbreaks as these could have a severe

impact on equine populations. Laurentius described how in 1300 a fever called

squinantiam (a disease characterised by a drooping head, watering eyes, and a

throbbing pulse) claimed the lives of over a thousand horses in Rome.[432] An

outbreak of disease occurred in English royal studs during the famine and agrarian

crisis of 1315-1322.[433] This period was characterised by a series of bad harvests and

poor grain yields caused by a prolonged period of wet weather that began in 1314,

accompanied by livestock epidemics in 1316 and 1319.[434] The chronicler of the *Vita

Edwardi Secundi* (*c.* 1325) described how 'floods of rain' caused widespread crop

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[429] For the connection to strangles in medieval farming vocabulary see 'Straungeloun' in *A Medieval Farming Glossary of Latin and English Words Taken Mainly from Essex Records*, ed. by John L. Fisher (London: The National Council of Social Service, 1968), p. 35.
[430] Amy Young, *Strangles*, Center for Equine Health, UC Davis School of Veterinary Medicine (2010), <https://ceh.vetmed.ucdavis.edu> [accessed 23 September 2023].
[431] TNA, E101/97/11; E101/97/12, m. 3
[432] Laurentius Rusius*, p. 400.
[433] Ian Kershaw, 'The Great Famine and Agrarian Crisis in England 1315-1322', *Past & Present*, 59 (1973), 3-50 (pp. 4; 14).
[434] Kershaw, 'The Great Famine and Agrarian Crisis in England 1315-1322', pp. 7; 13.

failures and that 'in many places, the hay had lain so long under water that it could be neither mown nor gathered. Sheep commonly died and other animals were killed by a sudden pestilence'.[435] The royal studs appeared to be little affected by lack of supplies – royal prerogatives meant that available hay stores could be sequestered for the king's horses, and oat crops are tolerant of wet weather and so compared to other types of grain were relatively unaffected.[436] Signs of a more serious problem on stud farms are evidenced in an overall rise in mortality rates during the agrarian crisis, and the inclusion in the accounts of the numbers of mares described as *abortus*, or having lost their foals *in utero*.

The keeper of the king's studs at the time was the Dominican friar Brother John Redemere, and his records for Rayleigh, Woodstock, Windsor, Cornbury, and Risborough during 1319-1324 offer an insight into mortality rates during this period (Figure 4.3). The figures show that a total number of 225 horses comprising mares, foals aged under one year, and youngstock aged between one and three years of age died from murrain. In addition, 100 cases of miscarried foals were recorded, bringing the total number of horse losses to 325. These are the first accounts that record abortions, and although it is possible that some mares did miscarry in previous years, the decision to include such information in this period probably reflects concerns over an increase in numbers. Rayleigh was one of the first studs affected. Previous mortality rates were low or non-existent: accounts for 1292-1296 and 1317-1318 record no deaths, but in 1319 ten out of its 38 mares, 4 out of 16 newborn foals, and 10 youngstock aged between one and three years of age were

[435] V*ita Edwardi Secundi: The Life of Edward the Second*, ed. and trans. by Wendy R. Childs (Clarendon Press, 2005), p. 111.
[436] Kershaw, 'The Great Famine and Agrarian Crisis in England 1315-1322', p. 16. The sheriff of York was ordered to supply two shiploads of hay for the horses stationed at the garrison of Berwick, see *CCR*, Edward II, 1313-1318, p. 112.

murrained.[437] Mortality rates were lower the following year, but in 1321 almost half of

all foals died, and in 1322 figures rose again, resulting in the loss of a further 9

mares and 6 youngstock. In total, 54 of Rayleigh's stock were recorded as murrained

and 25 pregnancies failed due to mares aborting. Woodstock fared better, but still

faced an overall loss of 31 horses and 20 cases of miscarriage.
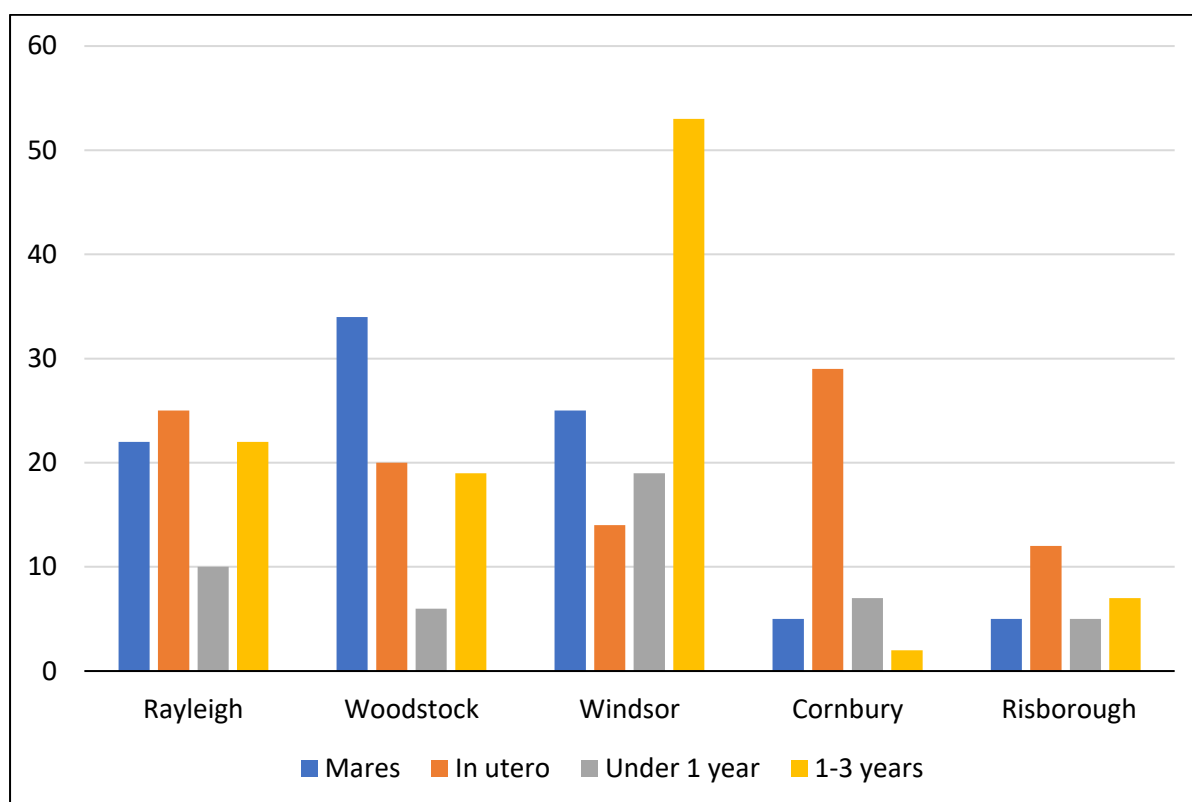
Figure 4.3: Number of deaths at Rayleigh, Woodstock, Windsor, Cornbury and Risborough 1319-1324[438]

More significant was the loss at Woodstock of 2 destrier stallions to murrain in

1320 and 1321, followed in 1323 by the death of no fewer than 4 stallions in 1323, a

calamity that must have been a blow to the king's breeding programme.[439] Windsor

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[437] TNA, E101/97/9; E101/97/27, mm. 1; 3.
[438] TNA, E101/99/27.
[439] TNA, E101/99/27, m. 5. These comprised two bays (one is recorded as having a brand on its leg, the other had been sent from the king's stables in Abingdon), a morel destrier from Cornbury and a dapple-grey courser.

was hit particularly hard in 1320, losing 12 of its 42 broodmares, 13 of its 33 foals, and 23 other youngstock; figures improved the following year but 19 deaths were still recorded.[440] Of significance is the high rate of deaths in horses between the ages of one and three (53 in total), although why Windsor experienced such high rates in this subsection is not explained. It is possible that the stud experienced a particularly virulent strain of disease to which immature horses were highly susceptible. The studs of Cornbury and Risborough were less affected, losing a total of 72 horses between them, but Cornbury stands out for having the highest rate of aborted foals. A total of 85 pregnancies took place in the period but 29 – just over one-third – of these ended up failing.

Signs that the murrain was widespread is suggested by the stud records for the king's park and stud at Haverah, North Yorkshire. The only surviving account is dated 1320 and was raised by the park keepers William de Wyndgates and Walter de Rothley, but it reveals that in that year 5 of the 53 broodmares and 7 out of 45 youngstock died of murrain. Equally devastating was the loss of 118 head of cattle (a figure that represented just over 40 per cent of its stock) to the epidemic that had begun decimating cattle and oxen numbers in England in the previous year. The stud accounts for Bolton Priory also showed a similar drop in horse numbers around the same time as the royal studs began to experience higher levels of murrain. In 1312-1313 the priory had recorded 42 broodmares on its estates, but by 1318 numbers had fallen to 14.[441] Figures remained low and did not show signs of recovery until 1324. Similarly, on royal studs mortality figures were significantly reduced by 1324:

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[440] TNA, E101/99/27, mm. 4; 5.
[441] Kershaw, *Bolton Priory: The Economy of a Northern Monastery 1286-1325*, p. 104, Table XIII. Kerhaw notes that murrain accounted for the loss of much of Bolton priory's stock of cattle, so it is likely that the depletion in horse numbers was also due to disease: Kershaw, 'The Great Famine and Agrarian Crisis in England 1315-1322', pp. 25-26.

Windsor recorded 8 deaths; Rayleigh and Woodstock 5, and Risborough and Cornbury recorded none at all.

Determining the pathology of horse murrains is difficult as the *equitium regis* records provide very little in the way of identification. It is, however, probably no coincidence that the horse murrain coincided with other livestock epidemics in the same period. Ian Kershaw noted that an epizootic affecting mostly sheep broke out in 1315, followed by a second wave of disease that destroyed large numbers of cattle, including those at Haverah, between 1319 and 1321.[442] Although Philip Slavin concluded in his research that 'there is no evidence of increased horse mortality during the crisis years' as 'the pathogen affected cattle alone', the *equitium regis* records indicate that horse death rates did rise. The cattle plague is believed to have been caused by rinderpest, a highly contagious and deadly disease that affects only cloven-hooved animals, so the murrain that affected horses must have been a different pathogen.[443]

A clue to the nature of the disease can be found in the accounts for Cornbury in which the miscarriages of its mares are stated as being caused by 'the disease called *mal de langue'* (which translates literally as 'disease of the tongue').[444] The connection between this term and equine disease first appears in 1254 in the annals of Dunstable priory in which it was recorded that 'there came a violent pestilence of horses called *malum linguae*, and it killed many horses both in France and England, and rendered many sick and useless, and who could scarcely

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[442] Kershaw, 'The Great Famine and Agrarian Crisis in England 1315-1322', p. 24.
[443] Philip Slavin, 'The Great Bovine Pestilence and its Economic and Environmental Consequences in England and Wales, 1318-50', *The Economic History Review*, 65 (2012), 1239-66 (p. 1245); Kershaw, 'The Great Famine and Agrarian Crisis in England 1315-1322', p. 24. Like Slavin, Kerhaw also pays little attention to the effect of the epidemics on horse populations but is somewhat more conservative in his approach, stating that the epidemics were 'largely' confined to sheep and cattle.
[444]TNA, E101/99/26, m. 10, 'Morb[us] vocat[us] maldelangue'.

be cured afterwards'.[445] In John L. Fisher's *A Medieval Farming Glossary* the term

mal de langue or *malum linguae* is equated with foot and mouth disease (FMD)

which is known to decimate cattle populations but according to modern science,

does not affect horses.[446] Clinical symptoms of FMD in cattle include painful blisters

in the mouth and on the feet, so it may be that the horses in the 1254 epidemic (and

the mares at Cornbury) exhibited similar enough symptoms for *mal de langue* to be

conflated with FMD.[447] A comparison can be made with the modern viral disease

vesicular stomatitis which has symptoms that are almost indistinguishable from FMD.

It affects mostly horses, cattle, and swine, and manifests as a fever accompanied by

painful blisters in the mouth, on the tongue, and in the feet. Vesicular stomatitis is

spread by direct contact with infected animals and by biting insects, and although

mortality rates today are low to moderate, it commonly causes pregnant mares to

abort their foals.[448] Whether the deaths of the royal horses were caused by vesicular

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[445] *Annales Monastici*, ed. by Henry Richards Luard, 5 vols (London: Longmans, 1864-1869) III (1864), p. 194. 'Venit pestis equorum saevissima, quae Malum Linguae appellatur, et multos equos in Francia et Anglia interfecit, et multos infirmos et inutiles reddidit, qui vix postea sanari potuerunt'. In the Wardrobe accounts for 1285 a sick rouncey is described as suffering from 'malo lingue', but as this did not appear to coincide with an epizootic it is unclear whether this was a disease or a case of a damaged tongue, see Byerly, I (1977), p. 63.

[446] 'Mal de Lange' in *A Medieval Farming Glossary of Latin and English Words Taken Mainly from Essex Records*, ed. by John L. Fisher (London: The National Council of Social Service, 1968), p. 22.

[447] 'Foot and Mouth Disease', *Department of Agriculture, Environment and Rural Affairs* (2023) <https://www.daera-ni.gov.uk> [accessed 16 September 2023]. Hippiatric authors wrote of a disease named 'pinsanesse' or 'pinzanese', which manifested as putrid sores on the tongue and ulcerating feet, but this was not considered to be a fatal condition, see Jordanus, p. 92-93; Laurentius Rusius*,* pp. 272; 274.

[448] 'Vesicular Stomatitis: How to Spot and Report the Disease', *Department of Agriculture, Environment and Rural Affairs* (2023). For information on outbreaks see Juliana Cargelutti, and others, 'Outbreaks of Vesicular stomatitis Alagoas virus in Horses and Cattle in Northeastern Brazil', *Journal of Veterinary Diagnostic Information*, 26 (2014), 720-836; Luis L. Rodriguez, 'Emergence and Re-emergence of Vesicular Stomatitis in the United States'*, Virus Research,* 85 (2002) 211-21. EHV, or Equine Herpes Virus is also associated with a high rate of abortions. For more information see *Equine Herpesvirus 1 & 4 Related Diseases*, American Association of Equine Practitioners (2017), <https://aaep.org> [accessed 23 September 2023].

stomatitis is unclear, but it is possible that this disease or a similar virus contributed to their demise.

Despite the attrition rate of horses during the years of the epidemic, Edward II was able to bolster his horse numbers by absorbing into his studs the stock seized from his opposing nobles. This was fortuitous timing, for if replacement horses had not been readily available his breeding programme would have been seriously affected. The effect of the epidemic on overall horse stocks in England is clouded by a lack of documentation, but what is clear is that the animal epidemics that devastated English agriculture in the second decade of the fourteenth century were not restricted to sheep and cattle.

Conclusion

This chapter has presented an overview of where warhorses came from by investigating horse breeding on royal studs. The demand for a sustainable supply of warhorses was generated by difficulties in importing warhorses from abroad in 1282. This led to a reformation of the royal studs and a revitalised programme of horse breeding. This involved setting up a network of studs and the employment of a hierarchy of officials and grooms to manage breeding operations. A complex system of administration was put in place to monitor stud expenses, horse numbers, and the locations of stallions, and this suggests that the production of warhorses was an important feature of the reigns of Edward I and Edward II. Breeding was tightly controlled so that horses could be selectively bred to pass on their desirable characteristics. These characteristics included good conformation, appropriate temperaments, and favoured colours. Although the revitalisation of the royal studs was instigated by Edward I, his son, Edward II, was also a keen horse breeder and appears

to have made attempts to increase production and improve the quality of his stock. However, horse breeding was not without its difficulties: the epizootic that followed the Great Famine - and which to date has been believed to only affect cattle – also had a devasting effect on horses.

Chapter Five: Breaking and Training

This chapter investigates the training of royal horses for warfare. It explores how horses were selected for training, how they were taught to carry riders, and how they were prepared for life as combat horses. It asks whether all the youngstock bred on royal studs were destined to go on as warhorses, or whether they were selected for having particular characteristics. Topics such as the age at which young horses began their training and the methods used to educate them are investigated. The training of warhorses is investigated by analysing the documentary evidence for horse training equipment, evidence that has to date been unexplored by historians. This evidence is contextualised within the intellectual framework of horse training presented by hippiatric manuals, and also by drawing from personal experience. This chapter then considers the trajectory of horses chosen for warfare by discussing what happened to them once they left the stud network. It provides insights into how horses might have been prepared for warfare and does this by including a consideration of their physical and mental capacities, and by conducting experimental tests to introduce modern horses to weapons.

Equestrian Terminology

There are many different terms used to describe the methodology of horse training in medieval and modern languages. Today, the process of accustoming a horse to carrying a rider is referred to as 'breaking in'. This is something of a misnomer as it implies physical and mental coercion, whereas most modern breaking techniques comprise a series of educational steps in which the welfare of the horse is paramount. The initial phase of breaking is frequently referred to as 'starting' a horse

and consists of getting the animal used to being handled and wearing a saddle and bridle. The horse is said to have been 'backed' once it has been introduced to a rider and has been taught the basics of moving forward and turning. This stage is followed by a more advanced period of training or 'schooling' that can last several years. This consists of teaching the horse to perform its role and hone its abilities through a series of progressive steps.

Hippiatric treatises recognised three distinct stages in the breaking process. Jordanus's schema for training was directed at educating colts that had been left to run wild in the mountain pastures with their dams. Here, they would have had little or no human interaction and therefore his instruction for the first phase of training was titled *de captione et domatione equi* (capturing and taming of the horse).[449] The colts were caught and placed in stalls so they could be domesticated, and this involved accustoming them to being handled, haltered and led around. Once this had been completed the colts progressed to the next stage of *doctrina* or learning. This phase consisted of backing and schooling the horses so they learned to become obedient riding animals. Similar lexical usage can be found in the *equitium regis* records. The terms 'capture and taming' were used in connection with those studs located on the periphery of the main breeding network where herds roamed freely, much like the horses described in Jordanus's treatise. For example, in 1292 William Wyth's instructions were to *capiend[um] et domitand[um]* foals in the stud at Hope in the Peak District. In this case, the youngstock were rounded up and underwent a short period of haltering and handling before being put up for sale.[450] On main parks and studs such as Odiham and Reading the process of breaking was referred to as

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[449] Jordanus Rufus, pp. 4-5.
[450] TNA, E101/97/23.

facere ad capistrum.[451] Although the term translates literally as 'haltered' (to modern trainers 'halter-broken' horses have simply been taught to wear halters and submit to being led about), in reality, it referred to an extensive period of training that involved the use of a variety of training equipment – the aim being to produce a horse trained for riding. *Facere ad capistrum* incorporated much of Jordanus's *doctrina* and despite its confusing literal translation, the terminology can be compared to the modern lexemes of breaking and schooling.

Age

According to hippiatric treatises, the ideal age for horses to begin the process of domestication and training was from the age of two. Jordanus recommended that colts should be broken in when they reached the spring of their second year, and cautioned against starting training earlier as the work involved could potentially damage their leg bones.[452] The concern over the pressure of training on the horse's immature skeleton was also raised by Laurentius, who suggested that it was sometimes better to wait until colts reached their third or even fourth year as their limbs would be more mature and less prone to injury.[453] The correct age to begin breaking in a horse is the subject of much modern debate but most experts believe that it is best carried out when a horse has reached its full physical and psychological maturity.[454] However, as a rule of thumb, most modern horses begin their education when they are around two to two-and-a-half years old (but are not

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[451] For example, TNA, E/101/97/28 (Odiham); TNA, E101/99/14 (Reading).
[452] Jordanus Rufus, p. 5.
[453] Laurentius Rusius, p. 42.
[454] Anastasija Ropa, 'Crossing Borders in Equestrian Training: Applying Jordanus Rufus's Advice on Training Young Horses Today', p. 60.

expected to be in full work until they are at least four).[455] At the age of two-and-a-half, they are considered easier to break in as they are more impressionable and less powerful than a fully mature horse. This was recognised by Laurentius, as although he suggested leaving a horse until it was four, he also admitted that breaking in after the age of three was problematical, stating that 'beyond this age it can be difficult to tame'.[456]

The *equitium regis* accounts reveal that in practice, the colts on royal studs began their training during the autumn of their second year when they were approximately two-and-a-half years old – around the same age as horses today. During the last two decades of the thirteenth century the responsibility for overseeing the breaking of these two-and-a-half-year-old horses fell to the keeper of Edward I's warhorses, Richard Foun. During this period Foun was under instruction to 'view the king's studs, select colts therefrom and put them in halters and break them as he is further instructed by word of mouth'.[457] This directive is particularly revealing as it shows that the king's youngstock underwent a selection process to assess their suitability as royal warhorses. Not all the colts drawn from the stud network were chosen for breaking: in 1296 Foun received 16 colts from the park at Odiham and only half of these horses were recorded as *facere ad capistrum*, with the remainder being sold. Ten more arrived the following year, but only 6 of these were sent on to the royal stables at Chertsey for training. The screening of colts before training suggests that there was a strict criterion for their inclusion in the king's stables. There is no information in the chancery documents to suggest what Foun may have

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[455] Ann Hyland, *From Foal to Five Years* (London: Cassell, 1980), pp. 66; 68; Jennie Loriston-Clark, *Lungeing and Long-Reining* (Addingham: Kenilworth, 1993), p. 17.
[456] Laurentius Rusius*, p. 42. 'Ultra vero hanc aetatem, licet difficile sit domare'.
[457] *CPR*, Edward I, 1281-1292, p. 508.

been looking for when he inspected the horses, but his assessments must have involved an examination of their overall build, health, and temperament. One way to determine the parameters by which horses were evaluated is to turn again to hippiatric treatises, many of which included a guide to recognising the physical and psychological characteristics of the noble horse.

Selection

Jordanus concluded his chapters on breeding and training with a section on recognising 'the beauty of a horse's body'.[458] This was probably intended as a guide for breeders and buyers, and it offered a blueprint for the ideal conformation, or shape and structure, of a horse. Body proportion, musculature, and bone structure relate directly to the horse's capacity to perform athletically and remain sound throughout its working life.[459] This informed Jordanus's advice and although his treatise was aimed at the noble horse in general, emphasis was placed on attributes such as strength, agility, and power and these were conformational traits that officials such as Foun would have looked for when assessing the horses brought before them.

Jordanus opened his dialogue by stating that a horse had to have a large and long body with limbs that corresponded to its length, height, and size.[460] This was reiterated later in the text, revealing that he was keenly aware of the value of proportion. Whether a horse has a light or heavy body, its legs should be proportionally capable of supporting its mass so it can remain balanced and free

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[458] Jordanus Rufus, pp. 17-18.

[459] For a comprehensive work on equine conformation and related performance see Juliet Hedge and Don Wagoner, *Horse Conformation: Structure, Soundness and Performance* (Gilford: Lyons Press, 2004).

[460] Jordanus Rufus, pp. 17-18. Proportion is similarly dealt with by Laurentius Rusius and the author of the anonymous *Practica equorum*.

from injury. An analysis of the colts' proportions was likely to have formed the basis

of Foun's assessments. Jordanus went on to address individual parts of the ideal

horse's body using comparisons to other creatures to illustrate his points: the thighs

were described as large and full like an ox; the hocks curved like a deer.[461] Here,

Jordanus was speaking in terms of brute strength and agility, and these

characteristics would have been attributes for horses destined for warfare. He also

pointed out that short backs were a desirable feature of conformation, and this was

particularly pertinent to a warhorse. The length of a horse's back indicates its ability

to carry weight and a short spine can bear the weight of a rider more easily than a

long one. A short back also allows a horse to be more easily ridden in a collected

outline.[462] Collection refers to the physical posture made by a horse when it moves

its centre of gravity to its hindquarters by rounding its back and bringing its hind legs

under its body. This posture is critical in enabling a horse to move and turn with

athleticism and this would have been an advantage when the horse was required to

make feigned retreats or rout the enemy.[463]

     Speed and agility were also of benefit in pursuits or evasion. Jordanus

recommended a horse should be croup high (where the hindquarters are higher than

the withers) and this was explained by Laurentius as being an indicator of

swiftness.[464] Laurentius also related certain aspects of conformation to utility: thick

fetlocks and short pasterns indicated strength, which would have benefited a

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[461] Here, Jordanus is probably talking about hock angle. Straight hocks are commonly associated with an inability to withstand hard work and arthritis. For more information see Hedge and Wagoner, especially p. 192.

[462] K. J. Duberstein, *Evaluating Horse Conformation*, UGA Cooperative Extension Bulletin 1400 (2012), <https://extension.uga.edu> [accessed 11 November 2023]

[463] Jennie Loriston-Clarke, *The Young Horse: Breaking and Training* (Newton Abbot: David & Charles, 1995), p. 60; Gassmann, pp. 66-67; 77-78.

[464] Laurentius Rusius*,* pp. 12; 14. Rusius is correct: most modern racehorses and quarter horses are built 'downhill' (meaning their withers are lower than their croup) as they have been bred for speed.

warhorse that had to cope with varied terrain, but a great deal of hair on the lower legs was less admirable as it indicated a lack of agility.[465] Here, hippiatric authors appeared to be aware that copious amounts of hair on a horse's legs are commonly associated with heavier-built animals and were indicating a preference for lighter-boned horses that would naturally be more agile. The physical build of a horse was also indicative of how it would easily it could be controlled under saddle. Laurentius recommended choosing horses with fine jaws and long, slender necks as they would be easy to restrain in a bridle, whereas those with thick cheeks and short necks would prove more difficult to rein in.[466] Ease of control was a critical aspect in warhorse performance and such ideas, alongside the attributes of proportion, speed, and agility will have formed the framework for selecting colts for training.

A notable omission from hippiatric treatises is any indication as to the ideal height of a horse. Neither Jordanus nor Laurentius mentioned the subject but the *Practica equorum* offers a clue as to why this topic was not addressed. Its author stated that the ideal horse should be of a 'height corresponding to its strength', and this suggests that to hippiatric writers, physical height was less important than the ability of the horse to bear weight and perform its allotted task.[467] However, height may have been of some consequence when it came to selecting colts for the king. This is demonstrated in a letter written by Edward I on 25 April 1304 in response to news that the merchant Borgeys the brother of Pute had a new horse for the king. Although preoccupied with the siege at Stirling at the time, the king wrote to Borgeys asking whether the horse was 'suitable [for him], what kind he is, his height, age and

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[465] The pastern is the area between the hoof and fetlock, the latter being the metacarpophalangeal or metatarsophalangeal joint.
[466] Laurentius Rusius, p. 14.
[467] *Practica equorum*, fol. 20ᵛ.

colour'.[468] At over six feet in height, it is perhaps not unusual that Edward might

express an interest in the height of the horse or have a personal preference for taller

mounts.[469] Whether this was reflected in Foun's choices is uncertain, but the letter

does indicate that Edward had a keen interest in his horses and their particular

attributes.

The men involved in checking the king's colts would also have been looking

for signs of physical defects and sickness. Jordanus wrote of congenital

abnormalities that could manifest in a variety of forms including tumours under the

skin and malocclusions.[470] Of the latter, Jordanus described mandibular

prognathism, or underbite, where the lower jaw is shorter than the upper one. In

severe cases, this can affect the horse's ability to eat and comfortably wear a bit.[471]

Much of the hippiatric focus was on the limbs of the horse. Legs that were not

straight or had permanent swellings around the hocks, fetlocks, or hooves were

considered likely to cause problems with soundness and this must have been at the

forefront of Foun's examinations. Warhorses had to be able to withstand long

marches so any predispositions to lameness will have raised concerns. Physical

inspections would have included a check for subtle signs of weakness. Today horse

purchases are normally accompanied by a vetting process in which a qualified

veterinarian examines the horse before giving it a clean bill of health. Part of this

process includes a test for soundness by trotting the horse up and down on a level

surface and turning it on a tight circle to detect abnormalities in gait and foot

placement. Laurentius described a similar procedure to detect lameness: problems

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[468] TNA, C47/22/3/70, translated in Bain, II (1884), p. 395.
[469] Joseph Ayloffe, *An account of the body of King Edward the first, as it appeared on opening his tomb in the year 1774* ([n. pub.]: London, 1775), p. 12.
[470] Jordanus Rufus, pp. 19-20.
[471] Hayes, pp. 603; 629.

with the feet could be identified by watching to see if the horse bore more weight on its toes or the outside of its hooves; if it limped when being turned on a circle the problem was thought to be located in the shoulders or hocks.[472] Ensuring that the colts were physically suited to their intended role made practical sense as it helped to mitigate the risk of them breaking down from the demands of warfare.

Although the colts brought before Foun were juvenile animals his assessment may also have taken into account their temperaments. The character of a warhorse had been anthropomorphised in the writings of Isidore of Seville and later by Albertus Magnus, who wrote of how they would emulate the ideal knight by dashing eagerly into battle and fighting against the enemy using their teeth and hooves.[473] This natural aggression needed to be tempered by obedience to their riders, and the author of the *Practica equorum* may have been alluding to warhorses when he described how the ideal horse's virtue, or character, needed to be both 'bold and restrained'.[474] Laurentius offered some clear ideas on how the disposition of a potential warhorse could be discerned through physical signs: large, flared nostrils and big, protruding eyes indicated a courageous nature, and if the skin between its ears was firmly attached to the bone it signified ability in battle.[475] One way to test its mental calibre was to pull hard on its tail. If the horse stood still and resisted the temptation to step back or kick out, then it demonstrated the fortitude for warfare. The requisite here was for a horse that would act appropriately in a stressful situation and reflects the need for restraint that was noted in the *Practica equorum*. Despite the young ages of the king's colts, the men placed in charge of looking after them

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[472] Laurentius Rusius, pp. 12; 14.
[473] Isidore of Seville, p. 249; Albertus Magnus, pp. 1378-79.
[474] *Practica equorum*, fol. 20ᵛ.
[475] Laurentius Rusius, p. 14. Rusius appears to be referring to a horse with a fine-boned head.

would have had some inclination as to their inherent temperaments. Some horses are naturally more nervous or high mettled than others, and these may have been considered either too timid or too excitable to go forward as potential warhorses.[476] Others may have been judged to have a particularly docile nature and were considered more suitable for use as a royal riding horse (this may have been the case in 1312 when a two-year-old colt at Reading was retained as a palfrey for the king).[477]

According to the hippiatric advice the final criteria by which horses should be judged was colour. Its importance in equine assessment appears in the writings of many agronomists and hippiatric authors. Albertus Magnus placed colour in a hierarchy of desirability based on tropes of wildness and domesticity. Shades such as bay, black, white, and dappled were said to be indicative of noble horses, whilst duns, or ash-coloured horses with dorsal stripes, were associated with feral stock.[478] Hippiatric writers appeared largely ambivalent when it came to the subject of equine colouring. Jordanus simply stated that there were 'many diverse opinions' on the subject and that it would take too long to discuss them all.[479] The author of the *Practica equorum* also wrote that there were many different points of view but was able to draw on his own observations to challenge the authority of ancient writers. Whereas Albertus Magnus had associated dun with wildness and rusticity, the anonymous writer vigorously disputed this, arguing that he had known many good ones of this colour.[480] The analysis of warhorses carried out in Chapter Two supports

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[476] Xenophon cautioned against using a very high mettled horse as a warhorse because it would be too excitable in battle and 'often does much harm to himself and his rider'. Xenophon, p. 53.
[477]TNA, E101/99/14, m. 1.
[478] Albertus Magnus, p. 1378.
[479] Jordanus Rufus, p. 18.
[480] *Practica equorum*, fol. 20v.

this statement as it revealed that they appeared in a variety of different colouring, including dun. However, this does not preclude the idea that some individuals may have had personal preferences. In the letter sent by the king to Borgeys, Edward expressed an interest in the colour of his new horse, which suggests that he may have been hoping for a particular pigmentation.[481] The list of destriers in the royal stables in 1305 shows that almost 50 percent were pied, so the king may well have had a liking for broken-coated horses. Whether Foun took care to select colts of this colour is unknown, but it is not unreasonable to suggest that an awareness of royal preference may have influenced some of his choices.

The king's youngstock underwent a rigorous selection process before being selected for breaking. The blueprint of physical perfection outlined by hippiatric authors spoke to ideals of both physicality and trainability, offering a set of criteria that would have been at the forefront of decisions made by the men in charge of inspecting the king's colts. Those with correct conformation and suitable temperaments would have fulfilled the criteria for inclusion in the royal stables, and if they were of a favourable colouring then they may have been particularly admired. Officials such as Foun were looking for horses that were of exceptional quality and that warranted the extensive time and effort needed to train them for warfare.

Breaking in

The royal youngstock that fulfilled the selection criteria were subjected to an extensive period of education spanning several years. The instructions given to Foun in 1292 to 'break them [the colts] as he is further instructed by word of mouth' suggests that the king had a personal interest in how his horses were trained and

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[481] Bain, II (1884), p. 395.

had met with Foun to communicate his ideas.[482] This suggests that the breaking

process was considered an important part of warhorse production and it reflected the

beliefs of hippiatric authors who recognised that formative training was crucial to

producing a reliable and obedient horse. The author of the *Practica equorum* advised

that the process should be carried out through 'wise tutelage', or young horses would

become restive, a behavioural dysfunction characterised by a refusal to obey

commands.[483] Laurentius explained that such faults were difficult to eradicate and

were acquired through inappropriate early handling. As an example, he offered an

example of the horse's ability to learn good or bad habits through association: if it

appeared nervous when being ridden through loud places for the first time it was to

be coaxed forward rather than savagely whipped. If it was beaten the horse would

thereafter forever associate noise with pain and violence and become 'stupefied by

fear'.[484] The early instruction given to potential warhorses was therefore considered

pivotal in producing confident and obedient mounts and was tightly controlled. Any

breach of protocol had to be accounted for: William Beauxamys, keeper of certain of

the king's studs between 1311 and 1315, took care to note in his accounts that two

colts in his care had been haltered without royal permission as they were sick and

needed treatment from a marshal.[485]

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[482] *CPR*, Edward I, 1281-1292, p. 508.
[483] *Practica equorum*, f. 20v; Harrison, 'Jordanus Rufus and the Late-Medieval Hippiatric Tradition: Animal-Care Practitioners and the Horse', pp. 218-19. In his work on training cavalry horses the British officer Captain Louis Nolan (1818-1854) used the term 'restive' to describe horses that were resistant to commands. This was expressed by general disobedience, plunging and rearing: L. E. Nolan, *The Training of Cavalry Remount Horses* (London: Parker Son and Bourn, 1861) pp. 4-5.
[484] Laurentius Rusius*,* p. 72.
[485]TNA, E101/99/23, m. 5.

Although the *equitium regis* records provide the names of the men in charge of the king's colts they unfortunately offer little in the way of information on how these horses were broken in. However, Jordanus offered an overview of breaking and training which was based on a series of clearly defined steps designed to gradually introduce a horse to carrying a rider. This was aimed at colts that had been left to roam mountain pastures with their dams for their first two years and therefore the first step involved getting them used to being haltered and handled. To achieve this Jordanus recommended using desensitisation techniques: each colt was caught and tied in a stall so its body and limbs could be 'lightly and gently' touched with human hands until it learned to accept the new sensations without protest.[486] It also had to have its feet lifted and tapped to simulate being shod so it would not be afraid when it first visited the farrier. To facilitate the handling process each colt was fitted with a set of hobbles known as a traynel, or 'traginellus in the vernacular'.[487] These are described by Jordanus as consisting of a system of ropes that were tied firstly around the animal's forelegs and then to one of its hind feet. Laurentius also described hobbling colts with traynels, and in a beautifully illustrated early fifteenth-century copy of Laurentius's treatise, the artist provided an image of a hobbled horse to accompany the passage in the text (Figure 5.1).[488]

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[486] Jordanus Rufus, p. 5. Desensitisation techniques were not new: the Roman scholar Varro (116-27 BC) recommended hanging the horse's harness in its stall so it would 'become accustomed to the sight of it and to its jingling when it moves': Varro, p. 389.

[487] Jordanus Rufus, pp. 5-6.

[488] Jordanus Rufus, p. 6. These types of hobbles can still be found in use today in places such as the United States of America where they are known as 'three-line hobbles'.

Figure 5.1: Traynells, Italy, early fifteenth century. BAV, MS 7228 fol. 7ʳ

The advantage of using hobbles lay in their ability to keep a horse completely immobilised and this prevented it from moving away from its handler during this process. Hobbles would also have served as a safety measure for the men handling the colt as if it was approached from the same side its hind leg was fastened it would be unable to injure its attendant by kicking out. Jordanus recommended making traynels from wool as this soft material would not injure the horse's limbs, but on the royal studs traynels were made from hemp and were fitted using leather shackles.[489] This design had several advantages: the higher tensile strength of hemp would have made the hobbles less likely to break, and the shackles offered a quick and more secure way of attachment than tying ropes around a

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[489] For hemp ropes bought to make traynels see TNA, E101/97/2; for leather shackles see *Extracts from the Account Rolls of the Abbey of Durham*, ed. by Thomas Fowler, 3 vols (Durham: Andrews & Co., 1898-1901), III (1901), p. 613.

horse's legs (which if fitted too loose might be dislodged, or too tight could cause injuries). Although the colt was physically restrained Jordanus appeared keen to emphasise that it should be handled with patience and gentleness. This non-coercive approach demonstrates hippiatric concerns with producing compliant horses through trust rather than force.

No time frame was given for this process but the colts from the similarly managed royal studs in Wales and the Peak District were kept at Woodstock for six weeks before being put up for sale. During this time they were kept stabled and were attended to by the king's *garciones*, or grooms, who would likely have followed a similar process of domestication described by hippiatric authors.[490] Once Jordanus's noble young horses were considered tame to handle they progressed to the second stage of breaking known as *doctrina*. This commenced with the introduction of bridles and bits. The mouthpieces of the latter were smeared with honey or another sweet substance so the colt would associate its insertion into its mouth with a pleasurable experience.[491] Similar items were purchased at Odiham in October 1316 when 14 colts aged two-and-a-half arrived from Reading to be broken in under the supervision of William Beauxamys, keeper of the king's studs.[492] Halters, bridles, bits, and sets of traynels were purchased, and a jar of honey costing 6d. was also added to the accounts. Each colt was allocated its own groom who was paid 2d. a day to care for the horse in his charge.

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[490] In comparison, the youngstock on Henry de Lacy's stud at Igthenhill in Lancashire were rounded up and kept stabled for ten weeks before being sold. *Two Compoti of the Lancashire and Cheshire Manors of Henry de Lacy,* p. 127.

[491] Jordanus Rufus. p. 10. This method is still used today: the author of this thesis was taught as a child to smear honey or jam on bits to encourage young horses to accept having them placed in their mouths.

[492] TNA, E101/99/9.

As there is no indication in the stud accounts of specialist horse trainers being employed it is likely that the grooms broke in the colts themselves. They would have acted under Beauxamy's supervision and like Foun, received their instructions orally. The types of bits used they used for breaking are not recorded, but at the cathedral priory of Durham 'bits for taming the foals' appear in the accounts, suggesting that some were specially designed for the purpose.[493] These were probably simple in design as hippiatric advice was to use bits that were 'mild and light' as these would be kind to a young horse's mouth and therefore more easily accepted.[494] Jordanus offered a description of one such bit that was termed a *barra* and consisted of a mouthpiece made from two horizontal bars and one longitudinal bar. Extant examples of thirteenth and fourteenth-century European horse bits are very rare, but Laurentius also wrote of the types of bits that should be used on horses, and a late fourteenth-century/early fifteenth-century copy of his work provides an accompanying illustration (Figure 5.2).

The longitudinal bar described by Jordanus was probably designed to act as a port. Ports are still found in some modern bits, and they are designed to lie flat on the tongue until the reins are strongly engaged, at which point they rotate upwards into the horse's palate. The bit in the middle of the bottom line of the illustration shows a bit with a port similar to the one described by Jordanus. Today, this would be considered a severe bit for a horse as the port has the potential to cause injury: horse remains discovered in the harbour at Yekepeni, Istanbul, showed severe palate lesions believed to have been caused by bits with similar types of

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[493] *Extracts from the Account Rolls of the Abbey of Durham*, pp. 518; 543. Laurentius also provides commentary on bits said to be suitable for young horses (Laurentius Rusius, p. 68).
[494] Jordanus Rufus, pp. 10: 14.

mouthpieces.[495] Nevertheless, hippiatric descriptions and illustrated manuscripts indicate that bits with complex and sometimes severe mouthpieces may have been used. This may reflect that when riding fully armed with weapons, a knight would only have his left hand free to hold the reins. This would necessitate a stronger bit that could, if necessary, act as an 'emergency handbrake' if the situation required a sudden halt.

Figure 5.2: Horse bits, Italy, late fourteenth/early fifteenth century. BAV, MS Urb Lat 252 De cura equorum liber, f 10ᵛ

Whatever the design of the bits used at Odiham it is clear by the variation in pricing that there were some differences between them: four were purchased for

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[495] V. Onar and others, 'Byzantine Horse Skeletons of Theodosius Harbour: 1. Paleopathology', *Revue de médecine vétérinaire,* 163 (2012), 139-46 (p. 141).

18d. each and the remaining ten cost 20d. each. Although it is possible that bits of

different descriptions were purchased this more likely reflected that they were of

different sizes – in 1283 Thomas de Wydorn was commissioned to make two 'large

bits' costing a shilling each for the king's great horses at Chester.[496] To work

effectively and not cause discomfort, the mouthpiece of a bit has to correspond to

the width of a horse's jaw. As a rule of thumb, smaller or more gracile horses have

narrower mouths, whereas larger or more stocky animals have correspondingly

bigger jaws. Bits that are too short pinch horses' mouths and press the inside of the

cheeks against their teeth, whereas ones that are too long tend to slide about across

their tongues, causing pain and discomfort.[497] Assuming that the less expensive bits

were narrower, this implies that almost a third of the colts sent for training at Odiham

were smaller or lighter than the rest. These may have been slower to mature, but it

could also indicate that like hippiatric discourses, size was considered less important

than conformation. What it does demonstrate is that the men in charge of the king's

horses took care to inspect the colts' mouths and select the appropriately sized bits

before commencing training. This reveals that like their modern counterparts,

medieval trainers were just as concerned with making sure that young horses had

correctly fitting equipment.

The next stage in Jordanus's training schedule consisted of mounting the

horse. This was to be carried out *sine sella et sine calcaribus*, without a saddle or

spurs, intimating that it was firstly mounted bareback.[498] Only after it had been ridden

in this manner for around a month was a saddle fitted. To the modern trainer, this

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[496] TNA, E101/97/2.
[497] For more information on the fitting of bits see D.G. Bennett, 'An Overview of Bits and Bitting', *AAEP Focus Meeting: Equine Dentistry* (2006) <https://www.ivis.org/library> [accessed 13 September 2022].
[498] Jordanus Rufus, p. 11.

sounds unusual as normally a saddle is introduced before a rider. The main reason

for this is security: if a horse decides to shy or buck the rider has a better purchase

point than if it was ridden bareback and so is less likely to fall off. Breaking a horse

bareback was not necessarily practiced in England: the purchase of a saddle costing

20d in 1342 by Durham priory 'to tame the foals' implies that saddles were used as

part of early training.[499] In late medieval France and Italy, such training saddles were

known as *bardelles* or *bardella*.[500] These were pads or straw-filled sacks and the

sixteenth-century Neapolitan riding master Frederico Grisone explained that these

were used to help accustom a horse to the pressure of the rider's seat.[501] Such

saddles do not appear in the *equitium regis* records but this may have been due to

their negligible cost – no items less than a penny appear in the accounts and straw-

filled sacks would have been cheap to manufacture. Other saddles do appear: an

account by Thomas de Taunton dated 1319-1321 shows saddles being made for the

king and his favourites, Hugh Despenser and Roger Damory. These were

sumptuously covered in materials such as camocas and silk and had *arsonns*

(*arçons* or saddle bows) decorated with the arms of each man. These saddles were

made for an important occasion, perhaps for Edward II's trip to pay homage to the

French king, Philip V, in June 1320.[502]

The purchase of halters, traynels, bridles and bits in both hippiatric texts and

royal stud accounts point to a similarity in training methods, but the latter also

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[499] *Extracts from the Account Rolls of the Abbey of Durham*, p. 542. In comparison, the prices paid for a war and courser saddle for John I, Duke of Brabant, cost thirty and ten shillings respectively (Byerly, I (1977), p. 407).

[500] Anastasija Ropa, 'Crossing Borders in Equestrian Training: Applying Jordanus Rufus's Advice on Training Young Horses Today', p. 71.

[501] Grisone, p. 111.

[502] TNA, E101/99/40; Phillips, *Edward II*, p. 358. Humphrey de Bohun included the provision of saddles in indentures made with Bartholomew Denefeud and Thomas de Boulton, see *CCR,* Edward II, 1318-1323, p. 15 and Bain, II (1884), p. 505. For a 'sella de armis', or war saddle purchased for fourteen shillings by Edward I in 1285 see Byerly, I (1977), p. 52.

includes equipment not mentioned by Jordanus. This may reflect that his instructions on breaking horses were meant as a guide rather than a comprehensive manual, but these additional items deserve consideration as they provide clues to the finer aspects of medieval horse training. One of the items of equipment purchased for every colt in training on the royal studs was a *supercingulum*, or surcingle, a broad belt of woven fabric or leather designed to be secured around a horse's middle.[503] Surcingles are still used by modern equestrians and can be put to various purposes: they can help get an inexperienced horse used to the sensation of having a girth tightened around its body; to help secure something on a horse's back, such as a rug or pad; or more importantly, as a training aid.[504] At Odiham surcingles were purchased for the colts in January, some two months after their arrival. This may indicate that they had been halter-trained and handled for several weeks before moving on to the next step of their education. As the colts were not provided with rugs the surcingles must have been used to secure some type of *bardelle* or to accustom them to girth tension. They may also have proved useful for other methods of desensitisation: in the early fourteenth century cloth coverings were secured to the backs of Mamluk cavalry horses to accustom them to wearing armour, and similar techniques would certainly have proved useful for horses that would go on to wear mail armour and caparisons on English campaigns.[505]

The purchase of surcingles was usually made in conjunction with pairs of *loygnis*, or long lengths of rope. For example, in 1312 surcingles and pairs of *loygnis* were purchased for each of the 14 two-and-a-half-year-old colts at Odiham; the

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[503] TNA, E101/97/3, m. 1; 2.

[504] Loriston-Clarke, *The Young Horse: Breaking and Training*, p. 78; Hyland, *Foal to Five Years*, p. 66.

[505] Abou Bekr ibn Bedr, *Le Naçeri*, 3 vols (Paris: Ministry of Agriculture, 1852-1960), II (1860), p. 170, cited in Ann Hyland, *The Medieval Warhorse from Byzantium to the Crusades*, p. 116.

following year the same equipment was bought for 12 other colts at Reading, and also for a young destrier colt taken from Odiham to stand as a stallion at Risborough.[506] Some modern training techniques also employ pairs of ropes, usually with surcingles. Groundwork exercises known as lungeing and long lining are integral to training modern youngstock.[507] Lungeing is a technique where the horse is made to work at the end of a long rope in a circle around the handler and is particularly useful as it allows the horse to be worked without a rider or before one is introduced. Lungeing has several benefits: it teaches a horse to respond to the voice and whip aids for starting, stopping, and changing direction; it helps the horse to learn to balance itself; it is useful in building its core strength and muscles. Two ropes can be also used in this exercise: each is attached to either side of the bit and the outside rope is drawn around the horse's hind quarters. This simulates the contact of reins on the bit and the movement of the ropes against its sides and quarters helps to desensitise the horse to strange sensations on its body. Like the use of Mamluk cloth coverings, this would also help accustom a colt to the movement of material on its back and sides.

Long lining is a similar process that always necessitates the use of pairs of long ropes. These are attached to either side of the bit and the handler walks behind the horse holding the ends. This allows the trainer to drive the horse forward and to make it stop and turn in response to the rein aids.[508] One of the benefits of being positioned behind the horse is that it allows the trainer to control the horse's hindquarters so it can be encouraged to bring its hocks underneath to push itself forward. This is the first step in teaching collection and straightness. It can also be

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[506] TNA, E101/99/9; E101/99/14, m. 2; E101/100/12, m. 3.
[507] This is also termed 'long reining'.
[508] Loriston-Clarke, *The Young Horse: Breaking and Training*, p. 60.

employed to instruct the horse to move sideways as the pressure of the lines against

its sides simulates a rider's legs. Both lungeing and long lining play a key role in

preparing a horse for the kinds of instructions it will receive once mounted and to

develop the correct musculature it needs to carry a rider.

This increased exercise naturally places additional nutritional and physical

demands on the horse's body. This was reflected in the changes made to the care of

the royal colts selected for training. Oat rations were doubled for horses in training:

the colts living in bachelor herds at Odiham in 1312 each received half a peck

(3.3.lbs) a day, but the twenty sent to Reading for breaking had this increased to a

full peck (6.6 lbs) every day.[509] Ten shillings were also paid to a farrier to provide

them with their first set of shoes. Although horses can be managed without being

shod, if they are worked to the extent that their hoof horn is worn down faster than it

can grow, they can become footsore. Shoes offered protection against the colts' feet

wearing down too quickly, and the increase in fodder suggests that they were being

prepared for a regime of increased exercise. This would certainly have been the

case if their training consisted of lungeing or long lining and this supposition,

alongside the similarity in equipment, may well point to the use of groundwork

exercises in medieval horse training.

Early Training

By August 1313 the colts that had arrived at Reading the previous autumn had

undergone ten months of preliminary education and were three years old. At this

point, they were moved out of the stud network and into the royal stables.[510] These

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[509] TNA, E101/99/14, m.1.
[510] Isotopic analysis of the teeth of Tudor horses found in excavations in London show that at the age of three they transitioned from their original locations to other places where they

stables were located outside of the court and served as a reservoir of horses that could be called upon to supply the king and his household with mounts. They were itinerant in nature: the number of horses (usually divided into groups of up to around 40 horses at a time) created a high demand for grass, feed, and bedding, and this meant that they were frequently moved around the king's manors and ecclesiastical estates to access supplies.[511]

What happened to the colts during their time in the king's stables is unclear, but careful scrutiny of the *equitium regis* accounts and hippiatric texts suggests that their training continued for an extensive period of time. One of the destinations for many of the king's colts was the royal stables located at Osney in Oxfordshire. In 1316 one newly broken three-year-old colt from Odiham and several four-year-olds are recorded as under the care of Osney's keeper, Giles Arpuche.[512] Two years earlier, Giles Toulouse, the king's sergeant and keeper of horses outside the court, had wintered 30 horses at the same location.[513] The exact ages of these horses is not given but some of the horses under Toulouse's care were recorded as youngstock (*pulli*), meaning they were under the age of five. In addition, his accounts included purchases of new bridles, traynels, surcingles and *loyngis*, and this suggests that many of the colts continued to be trained in much the same manner as

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were put into service. This supports the evidence that three-year-old colts were moved out of the stud network to begin their formal training and shows a continuity of practice throughout the medieval period. See Alexander J. E. Pryor and others, 'Isotopic Biographies Reveal Horse Rearing and Trading Networks in Medieval London', *Science Advances* (2024), 1-14 (p. 9).

[511] For example, in 1315 the account of Giles Toulouse showed he moved 36 horses between the royal manor of Osney and the king's stables at Winchester (TNA, E101/99/24). At the same time Adam de Bray, another keeper, had charge of 42 other horses and these were moved around various locations including Abingdon, Cheshunt and the late Simon of Ghent's (Bishop of Salisbury) manor at Sherborne, Dorset (TNA, E101/99/18; 19).

[512] TNA, E101/99/23, m. 1; *CCR*, Edward II, 1313-1318, p. 140.

[513] TNA, E101/99/19, m. 2. In this account the horses are all described as *equi*, but some are described as destriers in the accompanying records (*CCR*, Edward II, 1313-1318, p. 237).

they had on the studs. Toulouse was paid 6d. a day for his services and each horse

was allocated its own groom who was employed as both a horse carer and trainer. It

certainly made sense to hand over the king's youngstock to men such as Toulouse,

whose experience in handling the royal warhorses placed him in the ideal position as

a trainer.

The specialist care of colts once they had joined the royal stables is

evidenced in a Household Ordinance drawn up in 1318 in which youngstock were

dealt with in a separate section from other horses.[514] The royal stables fell under the

remit of the marshalsea, a sub-department of the Wardrobe, and three sergeant

marshals were appointed to care for the horses: one was responsible for those

travelling with Edward's court, a second looked after others stationed outside the

household, and a third was appointed to take care of the youngstock. His role was

outlined as 'a sergeant who is a capable keeper of young horses, which shall be

moved out of the king's stud, also of other horses, which will be delivered to him to

look after at any time by command of the king, who will look after the aforesaid

young horses well and appropriately, until they are able to work, and until the king

has ordered'.[515]

The directive is interesting as it makes clear that three-year-old horses were

treated differently from mature horses. The meaning of 'work' in this context was no

doubt referring to the type and intensity of the daily labour expected of adult animals,

and the reason for the three-year-olds' inability to perform such work was likely due

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[514] T. F. Tout, *The Place of the Reign of Edward II in English History* (Manchester: Manchester University Press, 1914), pp. 267-318.

[515] Tout, *The Place of the Reign of Edward II in English History*, p. 302. 'Item un sergeant, qui soit sufficeant marescall gardein dez joenes chivaulx, qi soient traiz hors de haras le roi, dez autres chivaulx auxint, qi serrount liverez a luy garder ascunfoitz par comaundementz le roi: qi gardera lez ditz jeonez chivualx bien et convenablement, tant qils soient de poer a travailler, et qi le roi avera ordeigne sa voluntee'.

to their youth and corresponding physical and mental immaturity. The view that three-year-olds were too juvenile for sustained labour was analogous to that of modern trainers and hippiatric authors. Ann Hyland, a published equestrian author and trainer of horses, considered that at three years of age horses should only be subjected to only short periods of training and ridden exercise as undue stress could result in lameness; Jordanus likewise made it clear that any work given to young horses at this stage should be 'moderate' as excessive labour would result in injury to their legs.[516] The training equipment purchased by Toulouse suggests that colts continued to be taught with surcingles and traynels but to what extent, and at what point they progressed to ridden work, is unclear. However, it is likely that sometime during their third year they would have begun to be ridden.

Jordanus's colts had been mounted at the age of two and a half, but their ridden experience appeared to be limited to learning to walk forward and turn in each direction. They were then turned away over winter and brought back to work the following spring when they had reached the age of three. This correlates with Hyland's method of breaking horses as she recommended leaving horses to mature over the winter months, meaning that when they restarted their education they would be physically stronger and more capable of enduring more work.[517] Jordanus was thinking along the same lines when he stated that once a colt had reached the age of three it could be ridden 'to a greater degree'.[518] This was carried out by trotting it in ploughed fields as Jordanus explained that the 'valleys and hills' created by the plough would cause the horse to lift its limbs and feet higher, making it lighter on its

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[516] Jordanus Rufus, pp. 11-12. This can also be compared to twelfth-century Welsh laws which stated that horses were expected to be 'bridle tame' and begin their education at the age of three', see *Hywel Dda: The Law,* ed. and trans by Dafydd Jenkins (Llandysul, Gomer Press, 1986), pp. 171-72.
[517] Hyland, *From Foal to Five Years*, p. 82.
[518] Jordanus Rufus, p. 11.

feet and more careful where it placed them. This suggests that the horse was meant

to be ridden across the furrows as the horse would have to navigate the undulating

terrain.[519] Here, Jordanus was astutely linking balance to proprioception. By

encouraging the horse to adjust its movements to accommodate the furrows it would

develop the muscle memory needed to maintain its balance. Modern trainers also

recognise the benefits of exercises designed to improve balance and regularity of

gait. This is usually carried out by trotting a horse over poles evenly spaced on the

ground, and this works in much the same way as Jordanus's ploughed furrows.[520]

These types of exercises would have been beneficial for a potential warhorse. The

ability to remain balanced and sure-footed across any terrain would mean they were

less likely to fall or strain their legs.

Jordanus also endorsed practising turning young horses more to the right as

they are 'naturally more inclined to the left'.[521] This advice appears to be based on

the fact that most horses are asymmetrical (this is thought to be partly due to the

position of foals in the uterus).[522] To combat this one-sidedness Jordanus advised

the rider to hold the left rein across the thumb and the right rein *cursione exsistente*

(literally, 'emerging through').[523] This is a somewhat obscure description, but

Laurentius understood it to mean that the right rein should be held shorter to help

turn the horse in that direction.[524] It was also suggested that the rider should 'draw

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[519] Jobst suggests that Jordanus meant for the horse to walk along the furrows, but it is clear in Molin's Latin version that the horse was to be ridden across them: Jobst, p. 23.
[520] Loriston-Clark, *The Young Horse: Breaking and Training*, pp. 88-89.
[521] Jordanus Rufus, p. 12.
[522] Kirsty Lesniak, 'Directional Asymmetry of Facial and Limb Traits in Horses and Ponies', *Veterinary Journal*, 98 (2013), e46–e51; Anna Byström and others, 'Biomechanical Findings in Horses Showing Asymmetrical Vertical Excursions of the Withers at Walk', *PLoS ONE*, 13 (2018), 1-15.
[523] Jordanus Rufus, p. 12. It should be noted that Jordanus appears to be describing holding the reins in one hand. This would certainly be applicable to riding a warhorse as the reins would need to be held in the left hand to leave the right one free to wield a weapon.
[524] Laurentius Rusius, p. 64.

the rein towards the horse's lower back and withers so the horse by flexing and

bending its neck inclines its head so it can hold its mouth continuously close to its

chest'.[525] This was said to be beneficial for both the horse and rider as by carrying its

head in this way the horse would be able to see its steps more clearly, turn better,

and also be more easily restrained. Here Jordanus appeared to advocate holding the

reins in a low and wide position to encourage a horse to bring its head and neck

down. This would certainly have helped to restrain it as horses that carry their heads

in the air are more difficult to bring to a halt. It is tempting to think that Jordanus was

insinuating that by arching its neck the horse would begin to learn collection, but this

is not made clear. What is obvious is that hippiatric advice to ride the horse in this

position 'little by little' demonstrates his awareness that training it to carry its body in

certain ways could only be achieved through short sessions of repetitive training.

Once the trot had been established the horse was encouraged to canter.

Jordanus advised the rider not to force the horse to keep up this pace for long

periods in case it became restive, a behavioural problem characterised by a

reluctance to 'repeat the same business'.[526] Here Jordanus was implying that the

horse would start to nap by rearing, spinning or planting and refusing to move

forward. Clearly, hippiatric authors understood that moderation was key to producing

an obedient riding animal, and this was perhaps the fundamental principle behind the

'wise tutelage' advocated by the author of the *Practica equorum*.[527]

Hippiatric advice also extended to accustoming the ridden horse to noise and

crowds. This could be achieved by riding through busy towns in areas where

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[525] Jordanus Rufus, p. 12. 'Trahat habenas freni manibus circa dorsum inferius circa
carresum, quod equus plicando, vel curvando collum intantum caput inclinet, ut os deferat
continue juxta pectus'.
[526] Jordanus Rufus, p. 12.
[527] *Practica equorum,* f. 20v.

craftsmen were working so it would experience loud sounds and general

commotion.[528] Grisone, who drew much of his advice from earlier methods of

warhorse training, suggested also riding it past slaughterhouses so it would not be

discomfited by the smell of death and blood.[529] As previously mentioned, hippiatric

authors advised that if the horse was unsettled by these new experiences it was not

to be whipped but instead coaxed forwards by means of 'gentle flattery'.[530] This

method of desensitisation reflected a profound understanding of the benefits of

positive reinforcement when training young horses.[531] By gently encouraging the

horse to overcome its instincts to flee, Jordanus was advocating building a

relationship of trust between the rider and his mount. For potential warhorses,

teaching them to remain calm and take confidence from their riders would have paid

dividends when faced with the noise and commotion of the battlefield.

Hippiatric advice on equestrianism concluded with a short note concerning

riding at speed. Jordanus suggested beginning by running the horse along a flat,

sandy track for a quarter of a mile each week. At an average canter speed of 10

mph, this involved around a minute and a half of sustained work. The distance could

then be increased to a mile or more, with the premise that such exercise would make

the horse 'faster and more agile'.[532] Jordanus's advice on incremental training

suggests that the main premise behind such work was to improve the horse's fitness

and athleticism by gradually increasing its muscular, respiratory, and cardiovascular

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[528] Jordanus Rufus, p. 14. Jordanus uses the term 'fabri' which can mean builders, craftsmen, or smiths.
[529] Grisone, p. 369.
[530] Jordanus Rufus, p. 14.
[531] For more information on animal responses to positive and negative reinforcement see Jack Murphy and Sean Arkins, 'Equine Learning Behaviour', *Behavioural Processes* 76 (2007) 1–13.
[532] For a comprehensive work on equine conditioning techniques see Hilary Clayton, *Conditioning Sport Horses* (Mason: Sport Horse Publications, 1991).

systems. Today equine fitness training is tailored to the role of the horse. For example, if it was to be used in endurance competitions it would be conditioned by long periods of work at a moderate intensity, but if it was a sports horse then short, fast sprints (such as those advocated by Jordanus) would form part of its fitness regime. The hippiatric conditioning programme shows an awareness of the benefits of fittening horses and may have been incorporated into the training of potential young warhorses. This would have provided several benefits: a well-conditioned and fit horse would be less prone to tiring on campaign and have the aerobic capacity to perform for short periods at speed. The latter would have been required if it was used to charge in formation or to pursue the enemy.

As with the earlier advice on cantering the horse, hippiatric authors caveated their instructions with a warning of the physiological effects of too much fast work. Jordanus warned that if the horse was made to run too frequently it would become over-excitable and prove difficult to hold, or conversely it would become restive and refuse to move. This demonstrates that although moderation was seen as the key to successful training, it was driven less by consideration of the physical health of the horse than by concerns over maintaining control of it.

Dental Treatment

Although the actions of the trainer were of paramount importance in preserving the equilibrium of control between rider and horse, Jordanus and Laurentius both asserted that a horse's performance could be improved by dental modification. This involved tooth extraction, and this was said to make a ridden horse easier to control.[533] It is useful at this point to clarify the number, names, and location of

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[533] Jordanus Rufus, p. 15.

equine teeth. Horses have between 36 and 40 permanent teeth made of 12 incisors

and 24 back teeth. The latter are made up of 3 premolars and 3 molars that are

situated on either side of the lower and upper jaws (Figure 5.3).
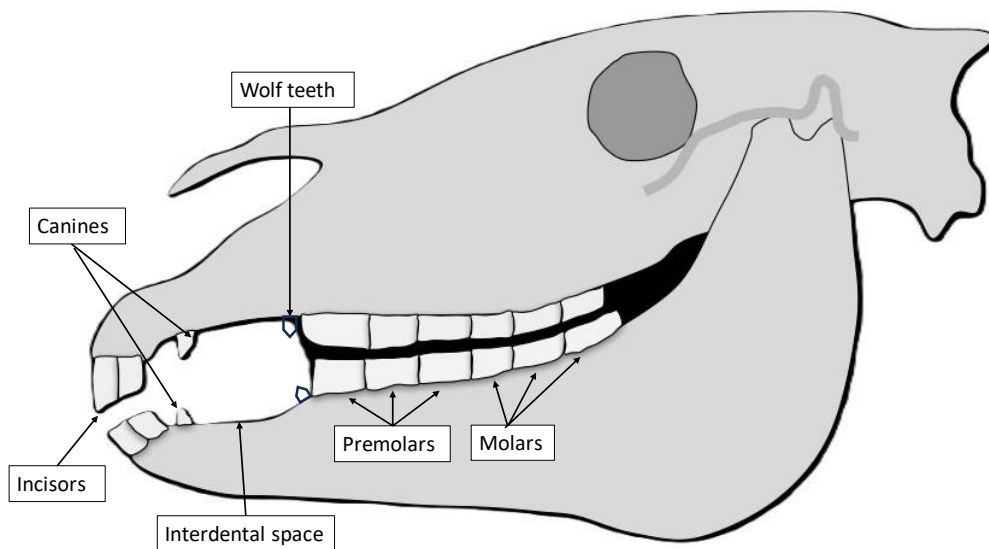
Figure 5.3: Horse teeth (author's own image)

Male horses also have two canines in each jaw, these are conical teeth that

emerge between the ages of four and six.[534] Many horses also have wolf teeth, or

vestigial first premolars, and these short, pointed teeth appear in horses between the

ages of six months and eighteen months. These appear in both the upper and lower

jaws.[535] The mouthpiece of a bit is designed to fit in the interdental space located

between the canines and the premolars. Jordanus and Laurentius referred to the

teeth that ought to be removed as *scalliones et plane* (Laurentius gives *planae*), but

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[534] Canines can occasionally be found in mares, but they are usually a characteristic of male horses.
[535] Hayes, pp. 690-99.

this terminology has caused some confusion. *Scalliones et plane* are simply

described as four teeth that can be found in pairs on either side of the lower jaw.[536]

    Harrison originally interpreted *scalliones* as canines, although in a later

article, he revised this to wolf teeth.[537] Jobst argued that *scalliones* were indeed

canines, and supported her argument by showing how the large mouthpiece of a

fourteenth-century Franco-Neapolitan bit would have overfilled a horse's interdental

space and impacted these teeth.[538] This would have caused a horse great

discomfort every time the bit moved in its mouth. However, Harrison may have been

right to revise his interpretation of *scalliones*: Jordanus stated that extraction should

be carried out when a horse reached the age of five (and by this age the canines

would have erupted), but in Laurentius's treatise dental extraction was carried much

earlier, when a horse was three and a half years old. A horse would not have

canines at this age, but it *would* have its wolf teeth. Today wolf teeth are removed as

a matter of routine as they lie directly in front of the premolars and can rub painfully

against a bit. They can also become infected and if they are sharp, they can lacerate

the insides of a horse's cheeks.[539] Wolf teeth normally have short roots so they can

be relatively easy to remove under light sedation. In comparison, canines have long,

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[536] Jordanus Rufus, p. 15. Molin gives 'maxilla interiores', or interior jaws, but this makes little sense and is likely a copyist error. Laurentius makes it clear that the teeth to be extracted were located in pairs from the 'maxilla inferiori', or lower jaws (see Laurentius Rusius, p. 74).
[537] Harrison, 'Jordanus Rufus and the Late-Medieval Hippiatric Tradition: Animal-Care Practitioners and the Horse', p. 221; Harrison, 'How to Make a Warhorse: Violence and Behavioural Control in Late Medieval Hippiatric Treatises', p. 13.
[538] Jobst, p. 35. The Franco-Neapolitan bit is located in The Met: *Curb Bit*, *c.* 1475, iron, copper alloy, enamel, gold, The Metropolitan Museum of Art, New York, <https://www.metmuseum.org> [accessed 21 March 2023]. This can be compared to the bits in Figure 5.2 which have similarly complex and large mouthpieces.
[539] P. M. Dixon and I. Dacre, 'A Review of Equine Dental Disorders', *The Veterinary Journal,* 169 (2005), 165-87 (p. 173).

curved roots with small crowns. This makes them very difficult to extract and today

the procedure requires extensive jaw surgery.[540]

Considering the difficulty of removing canines and the routine removal of

wolf teeth today, it is possible that hippiatric authors were using *scalliones* to mean

wolf teeth. Although Jobst pointed out that canines would impact the Neapolitan bit,

this did not necessarily mean they were removed. Aristotle pointed out that 'in the

case of horses much ridden these teeth [the canines] are worn away by attrition

caused by the insertion of the bit', and this suggests that bit impaction was not

unknown but not considered serious enough to warrant extraction.[541] A final note

should be made that Laurentius uses the term *canini* rather than *scalliones* to

describe a horse's canine teeth in a section describing how to tell a horse's age by

its teeth.[542] It seems anomalous that he would use two different terms to describe

the same teeth, so it is possible that he either interpreted the latter term as meaning

wolf teeth or was unsure as to which teeth Jordanus was referring.

The second dental term, *plane*, from the Latin *planus* or 'flat', is suggestive

of the flat occlusal surfaces of a horse's premolars and molars. Permanent

premolars begin erupting around the age of two and a half and are complete by five,

so these would have been present at three and a half, the age Laurentius advised

teeth should be extracted. Horses can evade the action of the bit by lifting their

tongue and grabbing the mouthpart between the premolars, making them more

difficult to control. The Italian author Leon Battista Alberti (1404-1472) certainly

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[540] Robert Ruddy, Equine Dental Technician, British Equine Veterinary Association. Interview by E. Herbert-Davies (Leeds, October 21, 2021). Ruddy has over three decades experience as a horse dentist. He explained that canines can be up to 7 cm in length, and most of this lies deeply embedded in the horse's jaw. Attempts to extract canines without extensive surgery would result in snapping the crowns of the teeth and leaving the exposed roots intact.

[541] Aristotle, I (1984), p. 904.

[542] Laurentius Rusius, p. 74.

considered this to be a problem: in his treatise *De equo animante* (On the Living Horse) Alberti stated that a horse which 'perhaps through obstinacy insists on holding the mouthpiece of the bit' could be cured through the extraction of four teeth from the lower jaw.[543] The removal of a horse's wolf teeth and the first of the three permanent premolars was to prevent it from becoming difficult to manage due to pain, and from being able to seize the bit with its back teeth.

Equine dental extraction was a key element in hippiatric horse training, but was this carried out in practice? An analysis of the *equitium regis* records suggests that this might be so. In June 1315 Toulouse had 35 horses in his care and an interlinear gloss states that 4 of these horses were kept behind to have their 'teeth extracted' by Walter the marshal.[544] In the following January similar procedures on other horses were also carried out: a list of expenses includes honey and wine that were purchased to wash out horses' mouths 'when their teeth were extracted'.[545] These were probably young colts as the ingredients were purchased alongside new bits and other training equipment. The inconsistency of the records means that caution must be taken in assuming that dental extractions were routinely carried out on royal youngstock, but it remains an interesting possibility nonetheless.

Hippiatric advice on breaking and dental modification was designed to facilitate the production of an obedient riding animal, but warhorses must have received some kind of additional training. These animals were expected to carry men at arms equipped with weapons into combat and few knights would have been willing to risk taking an untrained horse onto the battlefield - the risk of it panicking or

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[543] Leon Battista Alberti, *Leonis Baptistae Alberti, viri doctissimi, de equo animante* (1559), p. 24, <https://www.e-rara.ch> [accessed 21 February 2024].
[544] TNA, E101/99/19, m. 2. 'Extractu[m] dentiu[m]'.
[545] TNA, E101/99/24, m.3. 'Qu[an]do dentes eo[rum] fuerunt ex[tra[cte'.

proving difficult to control could severely jeopardise a man-at-arm's ability to perform as well as placing his life in danger. It is therefore highly likely that once fully broken royal colts received training tailored to their specific role.

Training for war

The main requirements of a warhorse was to act as the vehicle for a fighting knight and to charge in formation. One of the key characteristics of a man-at-arms was his skill in using weapons against his opponent and therefore one of the first steps in warhorse training was to accustom it to the lance and sword. As prey animals, horses do not automatically tolerate having objects wielded from their backs. The position of their eyes on either side of their heads affords them an almost 360-degree range of vision and they are particularly sensitive to movement. The natural instinct of a horse when faced with an unfamiliar object appearing in its line of sight is to startle and take flight. This is amplified if the movement occurs within a few metres of the horse as they have less acuity than humans, meaning that the lowering of a lance close to an inexperienced horse's head is difficult to immediately identify and can trigger a flight response.[546] Grisone understood the propensity of horses to shy at objects in what he referred to as their 'nebulous area' of vision, and recommended attaching pinwheels to their foreheads.[547] These would spin as the horse moved and their objective was to desensitise the horse to any unexpected movements in their line of sight. Whether similar techniques were used on the royal

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[546] For articles exploring equine vision and acuity see Evelyn B. Hanggi and Jerry F. Ingersol, 'Lateral Vision in Horses: A Behavioural Investigation', *Behavioural Processes*, 91 (2012), 70-78; Brian Timney and Kathy Keil, 'Visual Acuity in the Horse', *Vision Res*, 32 (1992), 2189-2293.
[547] Grisone, p. 369.

horses is not known, but they would have needed some sort of training to habituate them to having weapons wielded from their backs.

This author carried out an experiment to introduce two horses to a lance. Both horses were thoroughbred ex-racers aged eight and twelve and had been regularly competed in dressage and cross country. The first horse was a confident animal with a calm temperament whereas the second was a naturally more nervous animal. A tentpegging lance was used for the experiment which at 2.2 metres in length was shorter than most medieval lances but was considered long enough to produce a similar effect.[548] The horses were mounted and although the first horse accepted having the lance handed to its rider it sidestepped the first time it was lowered close to its head. The second horse was much less comfortable and backed away when the lance was handed to its rider. The decision was made to follow tentpegging guidelines by restarting the experiment from the ground.[549]

To begin with a short whip was moved around the horses' sides and heads each day until they became used to the new experience. The whip was then replaced by a broom handle and after two weeks the horses were comfortable enough to progress to having a lance moved around their heads. They were then mounted, and the training was repeated from the saddle. The horse that had remained relatively calm at the start quickly progressed to trotting around the arena

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[548] Tent pegging is an ancient sport based on cavalry training and consists of a rider on a galloping horse spearing targets placed on the ground. Today the sport is recognised internationally and forms part of a larger corpus of mounted games that fall under the title of 'skill at arms'. Medieval lances varied in width and length and became longer toward the end of the fourteenth century. By the fifteenth century extant examples are between 3.6 to 4.2 metres long. For more information on tentpegging see British Tentpegging Association (2015) <https://www.britishtentpegging.co.uk> [accessed 14 September 2022]; Michael S, Curl. 'Late Medieval Lance Use: Mounted Combat and Martial Arts in Western Europe from the 14th to the16th Century', *Arms and Armour*, 16 (2019), 27–55 (pp. 28-9).

[549] The British Tentpegging Association recommends adopting this approach when training horses to be ridden with a lance.

while the rider raised and lowered the lance. The second horse was less confident and exhibited this by occasionally jumping sideways if the weapon was brought too suddenly into its peripheral vision. It was therefore concluded that this animal was naturally more reactive and would need several more weeks training for it to become fully desensitised. This experiment demonstrated that training horses to accept a rider bearing arms must have formed an early part of the education of a warhorse and that the time taken to achieve this depended on its temperament. The methods used by the men in charge of training the king's horses is not known, but it is likely that the introduction of weapons followed a similar format to the author's own experiment.

Once a warhorse could be safely ridden with weapons it could move on to learning the different kinds of manoeuvres required on the battlefield. Cavalry charges were employed in battles such as Falkirk, and their aim was to cause the infantry to break their ranks in the face of an impenetrable wall of horsemen. A charge involved moving tightly together as a coordinated unit and maintaining formation was 'crucial for the effective use of mounted troops'.[550] This would have been difficult to achieve: the author has competed in several hunt races (unlicenced races across three miles of countryside) where up to forty riders are set off from a start line and have to maintain control of fresh horses on the approach to the first fence. The aim is to begin at a steady pace to conserve the horses' energy, but horses will naturally try to outpace each other and can become very difficult to hold in their excitement. Some horses inevitably end up further ahead and others fall behind, and if this was applied to a cavalry charge any break in formation would

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[550] Bernard S. Bachrach, p. 188.

severely weaken its impact and leave some men-at-arms vulnerable.[551] It is for this

reason that the nineteenth-century French military theorist Ardant du Picq stated that

the most effective method for a cavalry charge was to begin the approach at a walk,

then gradually increase the speed so that the faster horses could be held in check to

keep pace with the slower ones. Only when the enemy was close was it safe to let

the horses gallop, and this approach also had the advantage of saving the horses'

energy so they would not arrive at the encounter exhausted.[552]

This measured approach may have been taken by the king's troops, but the

charge was only successful against infantry if they broke ranks. At Falkirk the

Scottish infantry are believed to have been formed into tightly packed circles known

as schiltroms, and these held fast.[553] The only safe option for the cavalry was to turn

the entire formation sharply right (thus keeping their shields facing the enemy) or pull

the horses up and turn around to regroup for another charge. Gillmor pointed out that

to successfully turn horses at speed they would have had to be trained to move on

the correct leading leg.[554] Horses canter or gallop by extending one (leading) foreleg

further than another to balance themselves, and if a horse was turned sharply to the

right it would need to lead with the same leg to help prevent itself from falling. A

horse can be taught to lead with a particular leg by responding to cues given by the

rider's legs: for a right lead the left leg is usually moved back so the heel touches the

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[551] Accounts from nineteenth-century cavalry commanders suggest this was a significant problem. They describe how their horses would get overexcited and try to race each other with the result that some ended up too far forwards and others were left trailing behind. See A. J. M. De Rocca, *In the Peninsula with a French Hussar: Memoirs of the War of the French in Spain* (Barnsley: Frontline Books, 2017), p. 76.

[552] Ardant Du Picq, *Battle Studies: Ancient and Modern Battle*, trans. by Colonel John N. Greely and Major Robert C. Cotton (New York, Macmillan, 1921), p. 190; Dezydery Chlapowski, *Memoirs of a Polish Lancer*, trans. by Tim Simmons (Chicago: Emperor's Press, 1993), p. 66.

[553] Prestwich, *Edward I*, p. 481.

[554] Carroll Gillmor, 'Practical Chivalry: The Training of Horses for Tournaments and Warfare', in *Studies in Medieval and Renaissance History*, 13 (1992), 5–29, pp. 8-9.

horse on that side, and vice versa for a left turn. This would have formed part of a

warhorse's early ridden education and reflects the advice given by Jordanus to

frequently practice turning the horse, especially to the right to combat its natural

tendency to bend left. If the cavalry retinues at Falkirk had instead stopped their

horses before running into the infantry spears, they would have needed to execute a

volte-face, a movement that would have needed the horse to understand how to

collect itself to turn on its haunches.[555]

The importance placed on the ability of a horse to wheel about on command

is reflected in the attention paid to this type of training across the centuries: both

Xenophon and Grisone advised teaching the horse to run straight and turn sharply at

the end, and as late as the nineteenth century Captain Louis Nolan of the 15th

Hussars wrote of how his men were unable to perform properly when their horses

'will not second the rider's efforts with that speed and those sudden volts which

enable the horseman to close upon and conquer his opponent'.[556] This serves to

highlight that the level of training a warhorse received was directly proportional to a

knight's ability to fight effectively.

Opportunities for Practice

It was clearly important for both knights and horses to gain experience in mounted

combat before they reached the field of battle. The main opportunity for this was

provided by tournaments. These were sporting events that emerged in northern

France in the eleventh century and evolved to incorporate several different forms

including the mêlée, or tourney, which consisted of two opposing sides of horsemen

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[555] Gassmann, p. 74.
[556] Xenophon, p. 43; Grisone, pp. 153-65; Nolan, p. iv.

engaging in mock battle across a wide expanse of countryside, and the joust (*c.* 1200), in which individual riders attempted to unhorse each other with a lance.[557] Authors of early works on chivalry such as Ramon Lull (1232-1316) and Geoffroi de Charny (*c.* 1304-1356) encouraged youths to participate in tournaments as this 'practice of arms' offered opportunities to both earn esteem and hone their martial skills.[558]

One of the earliest English examples of young men gathering in groups to test their martial abilities was recorded by William FitzStephen (*d.* 1191) who described the London tradition for noble youths to engage in public mock battles with the sons of lay citizens on Sundays in Lent. According to Fitzwilliam groups of young horsemen rode forth in ranks and charged the opposing side, breaking through the opposition and attempting to unhorse one another. Each was described as equipped with a lance and shield and was mounted on a warhorse 'of which each is brought together and made to wheel around in circles'.[559] These military contests bear close similarities to the *buhurts,* or bohorts, another variety of tournament game that appears in German literature around the same time.[560] These involved groups of horsemen armed with shields and lances who would charge each other in an attempt to push their opponents into retreat. Like the mock battles held at Smithfield, these were urban-based military exercises often held in connection with festivities and

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[557] David Crouch, *Tournament* (London: Hambledon and London, 2005), pp. 1; 8. Also see Juliet Barker, *The Tournament in England, 1100-1400* (Woodbridge: Boydell, 1986).
[558] Llull, p. 47; Geoffroi de Charny, *A Knight's Own Book of Chivalry*, trans. by Elspeth Kennedy (Philadelphia, University of Pennsylvania Press, 2005), p. 48.
[559] FitzStephen, III (1877), pp. 9-10.
[560] William Henry Jackson, 'Lance and Shield in the Buhurt', in *German Narrative Literature of the Twelfth and Thirteenth Centuries: Studies Presented to Roy Wisbey on his Sixty-fifth Birthday*, ed. by Volker Honemann and others (Tübingen: Niemeyer, 1994), pp. 39-55 (pp. 39-40).

were designed to provide training in maintaining close and disciplined formations on horseback.[561]

A copy of a roll for a tournament held by Edward I at Windsor 1278 includes purchases of wooden shields and whalebone swords and this suggests that bohort-type events were popular ways to both entertain and practise knightly skills without violence.[562] Part of the display may have included similar manoeuvres to those carried out by the youths in London. The description of them wheeling their horses around together in circles suggests that they were practicing how to turn as a single unit, a tactic that was probably used when the cavalry at Falkirk were faced with unyielding opposition from the Scottish schiltroms. Horses would have benefited from the practice offered by bohorts as they would have learned to move together in close physical contact and balance themselves by using the correct leading leg.

Another form of tournament suited to training warhorses was the quintain. This comprised a shield hung from a rotating beam at a height corresponding to the position of a mounted man-at-arms, and the objective was to ride towards it and strike it squarely with a lance.[563] In 1253 the chronicler Matthew Paris described how in London during Lent 'the young men of London tested their own strength and their horses' speed in the contest commonly called quintain, having set a peacock as the prize'.[564] This form of target practice was a way for young knights to demonstrate their skills: in 1177 Philip the Count of Flanders broke his journey to set up a quintain

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[561] Jackson, pp. 40; 45.
[562] Lyons, p. 310.
[563] In the chanson du geste *Raoul de Cambrai* the quintain is described as made from two shields and two hauberks (presumably these were suspended at either end of the beam to form two targets): *Raoul de Cambrai*, ed. by P. Meyer and A. Longnon (Paris: Librairie Nizet, 1882), p. 18.
[564] Matthew Paris, *Chronica Majora* ed. by H. R. Luard, 7 vols (London: Longman & Co., 1872-1883), V (1872), p. 307. 'Juvenes Londonienses, statuto pavone provane pro bravio, ad stadium quod quintain vulgariter dicitur, vires proprias et equorum cursus sunt experti'.

in the marketplace of Arras so that 'aspirants for knighthood and stalwart youths on galloping chargers might try their strength by breaking their lances or piercing the obstacle'.[565] In addition to providing the opportunity for youths to practice with lances, the quintain would have played an important role in the education of warhorses. It is used today as part of the initial training of jousting horses as it accustoms them to the sound of a lance striking a target, and the swinging movement of the quintain once struck simulates the movement of an opponent.[566]

Another valuable lesson that could be learned using the quintain was how to ride in a straight line towards a target. This was an important part of using a lance as to deliver an effective stroke a knight had to be able to place his horse on exactly the right trajectory to meet his target or opponent. Riding a horse in a straight line is less simple than it sounds as they are naturally one-sided and will drift towards whichever side is dominant, and this can be compounded by the gravitational pull of the rider if he is not perfectly balanced on the horse.[567] The consequences of not teaching a horse to stay straight at the joust was addressed by Duarte I of Portugal (1433-1438) who warned it could result in competitors veering off course or colliding with each other.[568] Near-misses were not unknown: the German poet Ulrich von Liechtenstein (*c.* 1200-1275) wrote of one joust in which he and Sir Siegfried Weise passed so

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[565] *The Autobiography of Giraldus Cambrensis*, ed, and trans. by H. E. Butler (London: Jonathan Cape,1932), p. 70. Translation by Butler.

[566] Jason Kingsley, *Young stallion training for tournament and jousting: How do you train for medieval combat?*, Online video recording, YouTube (2019), <https://youtu.be/lNxfzpWY5E> [accessed 27 February 2023]; Royal Armouries, *How to Train a Jousting Horse,* Online video recording, YouTube (2020), <https://youtu.be/-LYVM1S4-QA> [accessed 27 February 2023]

[567] Sylvia Loch, *The Classical Rider* (Vermont: Trafalgar Square Publishing, 2000), pp. 229-31.

[568] Duarte I of Portugal, *The Book of Horsemanship: Livre do Cavalgar*, trans. by Jeffrey L. Forgeng (Woodbridge: Boydell, 2016), p. 111.

close they clashed their shields and damaged their knees.[569] Although Duarte

advised that a knight could keep his horse straight with the reins and spurs, the

horse's early work on long lines to encourage collection would have helped to

combat any natural tendency for it to drift. Joust practice would have formed a

regular part of a knight's training before taking part in formal competition or warfare

and was especially important if a knight was looking for an opportunity to gain

honour by individually jousting with an enemy opponent before a battle. One such

case occurred at the start of the battle of Bannockburn, when Henry de Bohun, the

Earl of Hereford's nephew, challenged Robert Bruce but misjudged his aim with the

lance and was subsequently slain.[570]

Juan Quijada Reayo, a sixteenth-century author of a treatise on chivalry and

also a jousting competitor, recommended that knights should practice jousting two or

three times a week.[571] Frequent training sessions applied as much to horses as their

riders: Jordanus highlighted this requirement by explaining that if a horse was left

idle it would easily forget the skills which it had been previously taught.[572] Military

practice for both horses and riders most likely took place near urban areas: an image

from *Les secrets de l'histoire naturelle contenant les merveilles et choses,* a

fifteenth-century geographical treatise, depicts men in Brittany practicing wrestling,

archery, and jousting just outside the confines of a town (Figure 5.4). Although

somewhat later than the period being studied in this thesis, it nonetheless illustrates

how rural areas provided the spaces to safely shoot bows and train horses.

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[569] Ulrich von Liechtenstein, *The Service of Ladies*, trans. by J. W. Thomas (Woodbridge: Boydell, 2004), p. 105, lines 921-27.
[570] Barbour, p. 451.
[571] Juan Quijada Reayo, *Doctrina del arte de la cavalleria*, cited in Noel Fallows, *Jousting in Medieval and Renaissance Iberia* (Woodbridge: Boydell, 2010), pp. 2; 367.
[572] Jordanus Rufus, p. 17.

Figure 5.4: Training practice, France, fifteenth century. BNF, Français 22971, Le secret de l'histoire naturelle contenant les merveilles et choses mémorables du monde, fol. 9ᵛ

Training in bohorts, quintain and jousts would have afforded both knights and horses good preparation for tourneys, events that were perhaps the closest simulation of warfare of all the varieties of the tournament. These were fought across wide expanses of countryside and consisted of groups of fully armed and mounted knights whose aim was to capture and ransom their opponents.[573] A feature of the tourney was the initial charge in which each knight would attempt to unhorse the opposition with his lance.[574] Those who did not fall would be carried through the line and turn to engage in the general mêlée that followed. That tournaments were

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[573] Richard Barber and Juliet Barker, *Tournaments: Jousts, Chivalry and Pageants in the Middle Ages* (Woodbridge: Boydell, 1989), pp. 14-15.
[574] Crouch, pp. 91-92.

'strongly imitative of battle' is attested by the toll they took on the participants.[575] In 1256 the seventeen-year-old prince Edward took part in one at Blyth where many nobles were 'prostrated, beaten, and trampled underfoot', including Robert Bigod, the king's marshal, and William Longespee, the second son of the Earl of Salisbury who later died from his injuries; four years later Edward attended a tournament overseas but returned home having 'suffered many wounds in his body, and having lost the horses, weapons and other things he had taken there'.[576]

Horses also sustained injuries in tournaments: the first earl of Pembroke, William Marshal (*c.* 1147-1219), recounted how in a tourney at Lagny-sur-Marne his horses 'fell thick and fast'; in 1309 two horses belonging to Gilbert de Clare, earl of Gloucester, died at a tournament at Dunstable.[577] Despite the sometimes difficult conditions faced by horses used in these events they were invaluable for providing the opportunity to test their mental and physical aptitude for warfare. This is most clearly illustrated by Marshal's account of one horse that was found to pull so hard in the tourney that no knight could control it. The problem was solved when the earl 'let out the bridle at least three fingers length from the bit and so released the lock of the bit that went down into its mouth so it had far less to bite on than usual'.[578] By altering the position of the horse's bit it became manageable, and it was only by putting horses into the warlike conditions of the tournament they could be properly trained and assessed as safe to use on the battlefield.

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[575] Richard Barber and Juliet Barker, *Tournaments,* p. 15.

[576] Matthew Paris, *Chronica Majora*, p. 557; *The Annals of Dunstable Priory*, trans. by David Preest (Woodbridge: Boydell Press, 2018), p. 149.

[577] *The History of William Marshal*, ed. by A. J. Holden, trans. by S. Gregory, 3 vols (London: Anglo-Norman Text Society, 2002-2006), I (2002), p. 247, line 4837; Crouch, p. 102.

[578] *The History of William Marshal*, p. 67, lines 1289-95. 'Qu'il l'alonna la cheveçaille / bien trei deie del frein sanz faille / si delaça la sereüre / del frein tant que la fereüre / lui avala desuz les denz / si k'il n'en out mie dedenz / tant com il en i sout aveir'.

How long the colts spent in training before they were considered fit for warfare would have depended largely on their temperaments and rate of physical maturity. However, the *equitium regis* accounts stop referring to youngstock as 'foals', after the age of four (after this they are listed according to their role) so it is likely that the aim was to produce a fully functional warhorse by the time it was five years old.[579] This correlates with the training of modern competition horses which are normally sent out to gain experience in low-key events in their fourth year and are eligible to start competing as five year olds.[580] Good preparation was the key to producing mounts that could be trusted to perform in battle, and a good warhorse would have had a positive psychological effect on the knight riding it. The nineteenth-century cavalry officer Captain Nolan perhaps best encapsulated this by describing the confidence his men took from riding into battle on well-trained horses that were completely under their control. This observation was echoed by General George Lovell of the 11th Hussars who wrote to Nolan stating that his troopers performed 'better in the field' and were 'more formidable in single combat' when they had confidence in their mounts.[581]

Conclusion

This chapter has presented an overview of the breaking and training of royal horses for warfare. Preparing a horse for battle was a long-term process that involved a carefully managed process of selection followed by a system of training that spanned

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[579] Pliny stated that chariot horses were allowed to start racing from the age of five: Pliny 8.66.

[580] Hyland, *Foal to Five Years*, pp. 119-20. For example, British Eventing (a competition involving dressage, cross country and show jumping) only allows horses over the age of five to compete, although it does hold some introductory classes designed especially four-year-olds.

[581] Nolan, p. 3.

several years. The initial selection of two-year-old colts was based on a rigorous evaluation of their conformation to determine if they had the build necessary to perform athletically, but temperament, height, and perhaps sometimes colour may also have influenced decision making. Colts were broken in at the age of two-and-a-half and the similarities in methodology between hippiatric treatises, royal accounts, and modern techniques demonstrate a continuity of practice based on gentle handling and progressive stages of education. The inclusion of pairs of long ropes in the *equitium regis* records is the first evidence that lungeing or long lining formed an important part of a horse's training process. Once royal colts reached the age of three, they were moved into the king's stables where they received around two further years of training tailored to their intended role. This would have included teaching them to become familiar with weapons, and during this stage tournaments would have provided the ideal opportunity to accustom horses to the manoeuvres required in battle. By the age of five warhorses had received three years of intensive training and were ready to be sent out on campaign.

Chapter Six: The Warhorse on Campaign

This chapter explores how horses were managed on campaign and how they were affected by warfare. Thousands of horses were taken to war but compared to the men-at-arms who went on campaign, little attention has been paid to the horses they rode. The valuation of horses during musters raises the important question of what factors were taken into consideration by appraisers when they inspected horses, and whether English armies branded their horses for each campaign. The logistics of providing fodder and shoes for horses on the march is also considered, and this study goes beyond questions of supply to ask what happened when supplies were interrupted, and how exactly were horses shod whilst on the march. The subject of horse armour is also brought under investigation and its form and function is explained. This also raises several questions: how much armour was worn by horses; what factors might have limited this; what was the efficacy of horse armour? Lastly, this chapter presents the first study of what happened to horses in medieval warfare and how human conflict affected their physical health.

The Muster

The first stage of mobilising warhorses for campaign began with the issuing of parliamentary writs to assemble for muster. The usual period of notice for musters was around six months and this allowed for preparations to be made.[582] For men serving in mounted retinues an important part of these preparations was making sure they had suitable horses. A knight needed several horses for the march and battle. The indenture raised in 1310 between Sir Robert Mohaut, Lord of Mold and

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[582] Morris, p. 157.

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Hawarden, and Sir John de Bracebridge, included *restor* for all Bracebridge's horses during wartime.[583] These horses are identified as *chivaus* (warhorses), a palfrey to ride on the march, a sumpter and rouncey to use as baggage animals to carry equipment such as arms and tents, and lastly, two horses for his servant.[584] This meant that a knight would be expected to turn up to muster with at least six horses although this figure is conservative - the reference to *chivaus* in Bracebridge's retinue implies that it was expected knights would need more than one warhorse. It certainly made practical sense to have a spare warhorse as if one became sick or was killed, it could be quickly replaced. As pay for men-at-arms depended on having a horse, losing one could result in wages being reduced from 12d. to 8d. a day or stopped altogether.[585]

The inventories drawn up for the expedition to Scotland in 1298 show that men-at-arms who had the financial means took spare warhorses on campaign. For example, Walter Beauchamp had a black destrier worth £46 at the start of the campaign in June, but this horse was killed at Stirling the following month. Beauchamp was able to quickly replace it with a bay destrier that was valued at £53 (the higher price of the second horse might reflect that Beauchamp had successfully negotiated an inflated price due to the loss of the first).[586] Beauchamp's two sons also lost their horses at Stirling. These were replaced by newly valued mounts, but both these horses were later withdrawn from service due to injury or sickness. The

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[583] '*Private Indentures for Life Service in Peace and War 1278-1476*, ed. by Michael Jones and Simon Walker, Camden Society, 5th ser., 3 (Cambridge: Cambridge University Press for the Royal Historical Society, 1995), pp. 51-52.

[584] Bracebridge can be found serving in Mohaut's retinues in 1298 and 1303 and on each occasion was mounted on an 'equus' worth 26 and 23 pounds respectively: Gough*,* p. 209; TNA, E101/612/12, m. 2.

[585] Ayton, pp. 95-96.

[586] Gough, p. 183.

scribe who noted these losses inserted a third valuation next to the names of both men, suggesting that in some cases several horses could be insured for each man-at-arms during a campaign. Another man who had the financial means to have multiple mounts was Sir Ralph Manton, Edward's cofferer. When John Benstede, controller of the Wardrobe, had his horse killed at the Battle of Falkirk Manton was able to come forward to give him his own warhorse, (a dun *equus* valued at £33) and immediately replace it with the spare one he had brought along on the expedition.[587]

The number of horses that set out on the march in 1298 was therefore substantial. Michael Prestwich estimated that only 40 per cent of cavalry were paid and this meant that in total, the number of warhorses in the army was probably around 3250.[588] If the earls and bannerets each brought along at least one spare warhorse, and the king had perhaps several warhorses at his disposal, this figure rises to almost 3400.[589] In addition, Prestwich calculates that there would have been a further 6750 ordinary horses used to mobilise non-combatants such as servants and grooms. There would also have been another 200 or so horses employed to move the king's personal household.[590] This would bring the total number of horses assembled at the muster in 1298 to just over 10,000.

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[587] Gough, pp. 177; 178. For a discussion on Manton's position in the royal household and the duty of senior clerks to take to the field, see Tout, *Chapters in the Administrative History of Medieval England,* II (1920), pp. 21-23.

[588] Prestwich, 'Edward I's Armies', pp. 234-35.

[589] One hundred and fifteen earls and bannerets are listed on the Falkirk Roll of Arms: Gough, pp. 129-59.

[590] Two hundred is a conservative estimate of the number of horses used to mobilise the royal household. For example, a roll of stable expenses for 1292 (TNA, E101/97/13, m. 1) lists 222 horses travelling with the king's household in Scotland; in 1306 a review of the king's horses accounted for 155 household horses made up of 13 destriers, 7 coursers, 12 palfreys, 24 sumpters and various riding horses for officials (TNA, E101/613/15). Carthorses were not included in this account, but 79 royal carthorses are listed in a separate document (TNA, E101/371/11). This would bring the total number to 234, similar to the figures in 1292.

The Appraisal Process

The most important part of the muster process for men-at-arms serving for royal pay was having their warhorses appraised for *restaurum equorum*. Compiling the horse inventories could take place over many days depending on the number of horses that needed valuing. In 1298 some 1300 horses were appraised over a period of 53 days between 30 May and 23 July; in 1306 it took a month to fully assess the 117 mounts in the prince's household.[591] Exactly how the appraisal process was carried out is not known, but the policy of paying warhorse compensation was not unique to England - France, Italy, and Spain also offered horse restoration as part of a package for military service - and their procedures will have been similar. This can be evidenced in the striking similarities between the format of English and Continental inventories: the latter also lists the name of each man-at-arms, alongside his horse's type, colour, markings, and value.[592] A French ordinance of 1351 offers an insight into the appraisal process: it states that retinue captains were to present their troops mounted, and each man had to give his full name before bringing his horse forward to be inspected by the appraisers.[593] This suggests that spaces were set aside at musters specifically for horse appraisals, and that rather than value each horse as it arrived, appraisals were not normally carried out until each retinue was properly assembled.

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[591] Gough*, pp. 161-237; Calendar of Documents Relating to Scotland: Volume V (Supplementary),* p. 194.

[592] For the format of French inventories see Roberto Biolzi, 'De l'écuyer au prince: Le cheval de guerre en Savoie à la fin du Moyen Âge', in *Le cheval dans la culture médiéval,* ed. by Bernard Andenmatten and others (Firenze: Sismel Edizione Del Galluzzo, 2015), pp. 89-118 (pp. 111-16); for the format of Spanish inventories see Baydal Sala, pp. 110-208.

[593] *Ordonnances des Rois de France de la Troisième Race, Recueillies par Ordre Chronologique*, ed. by Denis-François Secousse, 21 vols (Paris: Imprimerie royale, 1723-1849), IV (1734), p. 68. This corresponds to the layout of most of the English inventories which list individual retinues in separate blocks.

The first job of the appraisers was to assess the state of health of each horse to ensure it was fit for campaign. This made both practical and financial sense: if a horse was deemed to be in good physical condition it would be less likely to break down under the rigours of campaign and end up being the subject of an insurance claim. Health checks were certainly carried out as part of foreign appraisals. Arnaldus of Villanova, an Iberian physician who went on King John II of Aragon's campaign to Almeria in 1309, described how all horses were valued before the expedition and given a certificate of health that noted any defects that might disqualify the horse from military service.[594] A similar process was used by appraisers in Italy. The Pisan Military Code of 1327-1331 includes a list of rules for the employment of mercenaries and instructions for the valuation of their horses. Mercenary mounts were to be inspected for signs of disease, and any found to be sick were rejected as unfit for service.[595]

The Pisan Military Code specifically mentions three diseases or symptoms that appraisers were to look for. The first two are *bulsus* and *capomoribus*. The former corresponds to *pousiff*, or 'broken wind', a condition described as *pulsivus* by Jordanus.[596] Horses with this disease were described as suffering from chronically restricted breathing and the condition was thought to be incurable. The reason for eliminating horses suffering from breathing difficulties was that this would have vastly reduced their capacity to perform for any length of time, and this would limit the

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[594] *Arnaldi de Villanova, Opera Medica Omnia X.2 (Regimen Castra Sequentium),* ed. by Michael R. McVaugh (Barcelona: Universitat de Barcelona,1998), p. 172.

[595] Ercole Ricotti, *Storia delle compagnie di ventura in Italia,* 4 vols (Turin: Giuseppe Pomba,1847), II, Article VIII, p. 298. 'Non recipere aliquam equum curserium vel ronzinum restium bulsam vel capomoribum habenturm vel dolisoum'.

[596] 'Bulsam', in *Glossarium mediae et infirmae latinitatis,* ed. by Charles Du Cange and others (Niort: Favre, 1883-1887), 778b, <http://ducange.enc.sorbonne.fr/BULSUS> [accessed 27 October 2023]; Jordanus Rufus, pp. 40-41. The modern veterinary term for broken wind is Chronic Obstructive Pulmonary Disease. For more information on its symptoms see Hayes, pp. 411-14.

effectiveness of cavalry divisions. The second term, c*apomoribus* (literally, 'an affliction of the head'), is more obscure, but probably referred to a range of symptoms that could indicate disease. According to Jordanus these included a swollen head, watering eyes, drooping ears, and the discharge of cold, fatty fluid from the nostrils.[597] Sick horses would be more likely to end up being the subject of a claim and could potentially infect other horses. The rejection of animals showing signs of respiratory disease and illness highlights the importance placed on the health of warhorses and their capacity to withstand the rigours of campaign. The third condition that disqualified a horse from service was being *restius*, or restive, a catch-all term for bad behaviour. This could include vices such as refusing to stand still or go forward, kicking, and throwing their riders, and such animals would have proved a liability in warfare. How the officials could form an accurate assessment of a horse's temperament during a muster is difficult to determine. They may have included the term as a caveat so that if a horse proved restive during the campaign its insurance was automatically invalidated, forcing the owner to find a better trained mount.

Such assessments were likely made in the presence of horse doctors who would have had the training and skills to identify signs of sickness. Such men can be found serving with the royal household or among knightly retinues where they sometimes combined their role as horse doctors with fighting men.[598] In the inventories raised for the Scottish campaign in 1298 one Johannes 'le Mareschal' is listed alongside the king's physician. He may have served both as a horse doctor and surgeon's assistant, a dual role often undertaken by healthcare practitioners

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[597] Jordanus Rufus, pp. 115-16.
[598] Harrison, 'Jordanus Rufus and the Late-Medieval Hippiatric Tradition: Animal-Care Practitioners and the Horse', p. 85*.*

who viewed animal and human medicine as 'kindred disciplines'.[599] On King John II of Aragon's campaign to Almeria in 1309 the marshal employed to treat the royal horses was named Arnau Cicera.[600] He took with him three assistants to help attend to the king's mounts. On the same expedition, the knight Artal de Luna had in his retinue a marshal named Diego Pérez whose role was to minister to the warhorses.[601]

The English inventories only show those horses that passed the assessment process, so it is impossible to know if, or how many, horses were rejected by appraisers. Some horses may have been declined if they were considered to be of low quality, diseased, lame, or perhaps of unsuitable temperament. Officials inspecting the horses did sometimes give their approval to horses that showed evidence of previous injuries, but only with a caveat. This was the case in 1282 when appraisers felt obliged to note that the horse presented to them by Sir Hugh de Doddinseles had 'a mutilation of its two front feet and many other infirmities, and if it should die by any infirmity, restoration will not be made'.[602] In the same inventory, John le Flemming's roan rouncey was valued at £5, but a note was added that it had a swollen knee.[603] The acknowledgment of this defect meant that like Doddinseles' horse, compensation would not be paid if this injury led to permanent lameness or death.

However, some abnormalities were tolerated by the king's officials. The inventory also reveals that 11 rounceys put forward for appreciation were described

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[599] Gough, p. 175; Harrison, 'Jordanus Rufus and the Late-Medieval Hippiatric Tradition: Animal-Care Practitioners and the Horse', p. 74.

[600] *Arnaldi de Villanova, Opera Medica Omnia X.2 (Regimen Castra Sequentium),* p. 149.

[601] *Arnaldi de Villanova, Opera Medica Omnia X.2 (Regimen Castra Sequentium),* pp. 150-51; 154.

[602] TNA, C47/2/7, m. 2. 'Mahem[ium] de duob[us] ped' anteriorib[us] cu[m] plurib[us] aliis infirmitab[us], et si sit mortuus p[ro] aliquo isto[rum] infirmitatu[m] ei non restaurabit'.

[603] TNA, C47/2/7, m. 6.

as *monoculum* or having only one eye. One-eyed horses were not uncommon on campaigns: John le Mareschal had a *monoculum* rouncey on the Flanders campaign; one *equus* and two rounceys with single eyes can be found in the lists of horses valued in 1298; a one-eyed horse was appreciated for Edmund Hakelute at Berwick some years later.[604] This disability also shows up in French inventories: 4 horses are listed as *cum uno oculo* in a list of horses killed during the French occupation of Faucigny in 1355.[605] These horses might have lost their eyes as the result of injuries from the use of swords and lances, either whilst in training or through participation in tournaments and previous campaigns.[606] One horse on King John II's expedition to Almeria was recorded as losing its eye due to being struck on the head, and although the reason is not given this may well have occurred during fighting.[607] Cuts from sword blades may also explain why the *equus* belonging to Sir Nicholas Pessum in the Welsh inventory and two of the horses in the list of French horses were described as having cropped ears.

Despite such mutilations one-eyed horses and those with missing ears did not appear to be seriously devalued: the highest-priced rouncey in Peter de Chauvent's retinue at Falkirk was worth £10 despite having only one eye, and one of the monocular horses killed at Faucigny was the highest valued horse in the accompanying *restor* account.[608] Horses quickly adapt to the loss of an eye and the decision to include these abnormalities in horse descriptions most likely reflected the

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[604] TNA, E101/6/37, m. 1; Gough*,* pp. 168; 190; 227; TNA, E101/7/5, m. 2.
[605] Biolzi, pp. 111-16).
[606] From personal experience it takes a great deal of practice and skill to hold a lance steady whilst keeping the horse's body and head perfectly straight. I narrowly avoided injuring my own horse's eye when it unexpectedly drifted left when the lance was first lowered.
[607] Baydal Sala, p. 145.
[608] Gough*,* pp. 168-69; 227; Biolzi, p. 114.

need to clearly identify horses, and not because such defects were thought to affect performance.

Branding

The final part of the appraisal process may have been to brand the horses. A reference to the branding of horses in English armies can be found in an order issued on the eve of a campaign in Gascony in 1355. The instruction stipulated that John Dyncourt and three other men were to evaluate the horses at Plymouth and brand them with 'a certain sign, as is the custom'.[609] Whether this was referring to the routine branding of all warhorses, or just those deployed overseas, is unclear. Branding was a routine part of warhorse appraisals in France, Italy, and Spain. The 1351 French military ordinance stated that once a horse had been before the appraisers it was to be 'branded on the thigh with a hot iron, with such a sign as pleases those in charge, and all horses in the same troop should be marked with the same iron and sign'.[610] The military code issued in Florence in 1337 stipulated that every horse, even the baggage animals, should be recorded by their colour and markings and 'branded with a hot iron with a visible mark'.[611] In Spain, many of the horses taken on the Almeria expedition in 1309 already bore signs of brands on their necks, thighs, and hindquarters when they came before the appraisers. Some of the descriptions include eagles and wheels with crosses and these may have been a

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[609] *Foedera, conventions, litterae et cujuscunque generis acta publica inter reges angliae.*, ed. by Thomas Rymer, 4 vols (London: [n. pub.] 1727-1735), III (1740), Part I, p.111. 'Certoque signo, ut moris est'.

[610] *Ordonnances des Rois de France de la Troisième Race, Recueillies par Ordre Chronologique*, p.68. 'Marque en la cuisse d'un fer chaut, a tel saing comme II plaira a ceulx qui en auront afaire, et seront tour les chevauls d'icelle Route marquiez d'un mesme fer & saing'.

[611] *Documenti per servire alla storia della milizia italiana,* ed. by G. Canestrini (Florence: G. P. Vieusseux, 1851), p. 542. 'Marcare cel ferro caldo con segno apparente'.

mixture of stud marks, brands from previous campaigns, and military orders.[612] The similarities in English and Continental appraisal procedures suggest that English armies probably followed the same policy on branding horses for each campaign.

Branding appraised horses certainly held several benefits. If a horse was lost on a raid or in battle it could be identified by its brand and returned to the army, and for purposes of compensation, the brand mark could be cut out of a horse's hide and shown to officials to prove it had died.[613] If the brand mark could not be cut out - for example, if the horse had fallen on its branded side and could not be turned over - proof was sometimes provided by showing a horse's severed appendages. In 1303 Oswald Carliolo showed his rouncey had died by producing its ears and tail.[614] Transport horses, which may not have been branded as they did not qualify for automatic *restor,* were also identified in this manner: four sumpters employed to carry supplies for the royal household were proved dead by handing their ears and tails to officials.[615]

Another reason for branding may have been to prevent paid men-at-arms from having their best horses appreciated and then substituting lesser-valued mounts in their place. This deception could prove lucrative - if the substituted horse was subsequently lost on campaign the owner could claim its inflated value. This was a recognised problem: the French ordinance recommended troops be inspected fortnightly to check they were on the same horses that had been valued, *sans*

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[612] Baydal Sala, pp. 110-208. One horse is described as having the brand of the Order of Calatrava, a military order founded in Castile in the twelfth century.
[613] Philippe Contamine, *Guerre, état et société à la fin de la Moyen Âge* (Paris: Mouton & Co., 1972), p. 104.
[614] TNA, C47/22/2, m. 47.
[615] TNA, E101/612/12, m. 10.

fraude, and in France and Italy it was prohibited to sell, exchange, or give away

horses with military brands without permission of the marshal.[616]

The horses coming before English appraisers must have had pre-existing

brands either from their studs or previous campaigns, but there is only a single

reference to such marks - Sir Thomas de St Omer, a Norfolk knight, is recorded in a

1282 inventory as riding a black *equus* with a brand on its left shoulder.[617] Why

brand marks were omitted from English inventories is unclear, but a clue might lie in

the Almeria inventories. Although some of the horses in King John II's army had their

pre-existing brands described most are left unrecorded and only their positions are

given. This was likely due to the complexity of some of the symbols used as brand

marks. The brand featured on a horse illustrated in *Livro de la Menscalcia de li*

cavalli, a compilation of miscellaneous hippiatric treatises produced *c.* 1400, serves

to illustrate their complexity (Figure 6.1). It may be that English appraisers simply

omitted such information as it was too difficult and time-consuming to record.[618]

The methods used to brand appraised horses at musters would probably have

involved using a pen or a *trava* (Figure 6.1). This was a wooden frame designed to

keep a horse secure whilst it was receiving veterinary treatment or being shod.[619]

Branding is a short but painful process that involves applying a hot iron to a horse's

skin so a permanent mark is left behind, so horses would have needed to be kept

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[616] *Ordonnances des Rois de France de la Troisième Race, Recueillies par Ordre Chronologique*, p. 69; Ricotti, part 1, article VII, p. 302.
[617] TNA, C47/2/7, m. 4.
[618] Another example of the complexity of brand marks is illustrated in the image of the knight's horse in the Ellesmere manuscript, a version of Chaucer's *Canterbury Tales* produced *c.* 1400. The horse has two brand marks: one on its thigh which is represented by a closed M with two dots, and another on its neck which appears to be a Y in miniscule form, placed horizontally (San Marino, Huntington Library, MS EL 26 C 9, Canterbury Tales, fol. 10r).
[619] 'Trava', in *Logeion, Latin and Greek Dictionary*; John Clark, *The Medieval Horse and its Equipment* (Woodbridge: Boydell, 2004), pp. 18-19.

restrained during the process. Modern New Forest ponies are rounded up each year so their foals can be separated and branded, and the branding process is carried out in similar pens.[620] The appraisal of warhorses at musters required a great deal of organisation. Men had to be employed to assess every horse and this involved coordinating teams made up of appraisers, clerks, scribes, and horse doctors, as well as carpenters to construct pens and men experienced in branding horses.
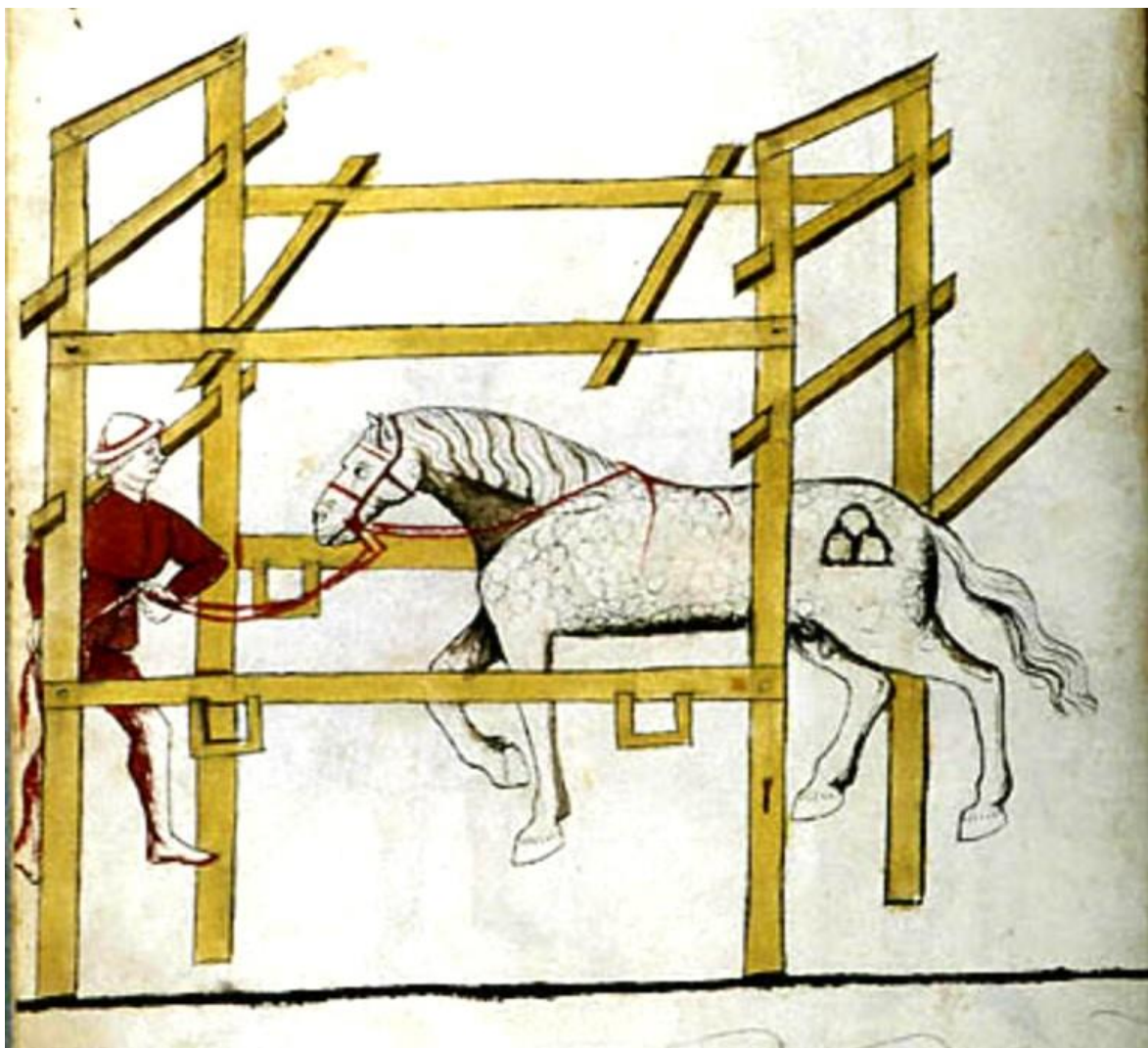
Figure 6.1: Branded horse being led into a *trava,* Italy, early fifteenth century. New York, Morgan Library, MS M. 735, Livro de la enscalcia de li cavalli, fol. 4^{v}

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[620] Gail Brownrigg, 'Pony Breeding in the New Forest: A Continuation of Medieval Practice', *The Materiality of the Horse*, ed. by Miriam A. Bibby and Brian G. Scott (Budapest: Trivent Publishing, 2020), pp. 1-36 (p. 26).

The March

Horses on the march had several main requirements: they needed an adequate supply of food, access to shelter, and regular shoeing. Warhorses required half a bushel of oats per day, meaning that if there were around 3400 warhorses on the 1298 campaign, they would have consumed 212 quarters (1700 bushels) of oats every twenty-four hours. This volume amounts to 20 tons or twenty large cartloads of grain.[621] It can be estimated that if an additional 6750 ordinary horses each received at least one peck of oats every day, then the volume of grain and the number of carts would be almost double.[622] To meet the need for such large quantities of oats Edward I issued orders to the sheriffs of Lincoln, York, Cambridge, and Nottinghamshire to collect a total of 9550 quarters and to send them to Newcastle.[623] The sheriffs of York and Lincoln were instructed to send 2000 quarters of oats to Carlisle, and a request for more, or 'as much as they can' were issued to six other counties and the treasurer of Ireland.[624] This meant that a conservative estimate of 15,500 quarters of oats was available by the time the army mustered in July – this would have been enough to sustain all the horses in the army for around a month.[625]

The horses also needed large amounts of forage in the form of grass or hay. Even if pasture could be found it was impractical and dangerous to turn large

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[621] John Langdon estimates that horse-drawn carts could carry up to a 1000 kg of weight: John Langon 'Horse Hauling: A Revolution in Vehicle Transport in Twelfth- and Thirteenth Century England?', *Past & Present*, 103 (1984), 37-66 (p. 63).

[622] Michael Prestwich, 'Victualling Estimates for English Garrisons in Scotland during the Early Fourteenth Century', *The English Historical Review*, 82 (1967), 536-43 (p. 536). Carthorses on demesnes were estimated to receive half a peck of oats per day, see John Langdon, 'The Economics of Horses and Oxen in Medieval England', p. 33.

[623] *CPR*, Edward I 1292-1301, p. 314. Some oats may have been used for human consumption, but the greater proportion was fed to the horses, see Prestwich, *War, Politics and Finance Under Edward I*, p. 126.

[624] *CPR*, Edward I, 1292-1301, p. 344.

[625] For works on the victualling of armies see Prestwich, 'Victualling Estimates for English Garrisons in Scotland during the Early Fourteenth Century'; David Stewart Bachrach, 'Military Logistics during the Reign of Edward I of England, 1272-1307', pp. 423-40.

numbers of horses out to graze – there was always the risk of accidents due to

horses kicking each other, as well as potential losses due to straying or theft by the

enemy. Instead, horses were hobbled during overnight stops and grass was brought

to them. This role fell to the *falcatores,* or mowers, and in 1303 at the start of the fifth

campaign in Scotland forty-two sickles were purchased for such men.[626] The

falcatores would have been sent out to cut grass and other vegetation in the

surrounding areas as the army moved into Scotland. In the winter season this was

no longer possible, so hay had to be sourced. Two shiploads were sent from

Kingston-on-Hull to Berwick in 1314, but suppling adequate amounts of victuals for

campaign horses was often problematic. Attacks on supply trains were not

uncommon: in 1295 at Conwy, North Wales, the entire train was seized by the

Welsh, in 1299 two carts and six horses were taken by the Scots as they crossed the

Solway to deliver supplies to Lochmaben, in May 1307 Scottish forces attempted to

ambush an English supply train in Galloway.[627]

By the time Edward I reached Stirling at the end of July 1298, he had run out

of supplies and had to restock from the merchants based there.[628] In the summer of

1304, again at Stirling, urgent orders were issued to send supplies of oats and beans

as the king's horses had 'nothing to eat but grass'.[629] Sometimes both grass and hay

were in short supply: in the spring of 1311 Robert Clifford complained about a lack of

fodder for the horses in Carlisle, and was told to 'do his best until the grass [begins

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[626] For purchases of hobbles and traynells for the prince's horses at the start of the 1303 expedition see Bain, II (1884), p. 365.
[627] Trivet, Nicholas, *Annales sex regum Angliae,* ed. by Thomas Hogg (London: English Historical Society, 1845), p. 335; Bain, I (1881), p. 285; N. Richie, Battle of Glen Trool: A Victory for Robert the Bruce?, Scottish History (2023*), <*https://www.scottishhistory.org> [accessed 6 November 2023].
[628] Prestwich, *War, Politics and Finance Under Edward I*, p. 116.
[629] Bain, IV (1888), p. 404.

to grow] when the host may foray and get supplies for the horses'.[630] Chronicle

accounts reveal the toll taken on horses due to the difficulties in finding sufficient

feed: in 1301 the chronicler William Rishanger related that 'whilst wintering in

Scotland many of his [the king's] great horses were lost due to lack of forage in the

cold winter season'.[631] The lack of provisions affected both soldiers and horses on

the Weardale campaign in 1327. The Lanercost chronicler recorded that the English

army was said to have 'daily lost both men and horses through lack of provender',

and the chronicler Jean le Bel described how the English horses were forced instead

to eat 'leaves from the trees and mouldy heath grass'.[632] Although David Bachrach's

investigation into military logistics concluded that the provision of supplies to soldiers

and garrisons in Scotland had greatly improved since Edward I's Welsh campaigns,

it was still clearly inadequate.[633] Occasionally an enforced interruption of supplies

meant that the horses themselves ended up being eaten: in 1294 when a revolt in

West Wales led to Aberystwyth castle being placed under siege the constable

claimed compensation for horses that were slain and eaten by starving soldiers; five

years later John Sampson, constable of Stirling castle, claimed for three horses – a

bay worth £13 7s. 8d., an £8 iron grey, and a mare bought for just under £1 – which

were 'eaten for default of food' when the castle was besieged by Scottish forces.[634]

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[630] Bain, IV (1888), pp. 40-41.

[631] William Rishanger, *Chronica monasterii S. Albani*, ed. by Henry Thomas Riley, 12 vols (London: Longman Green, 1816-1878), III, (1865), p. 210, DOI: https://gallica.bnf.fr/ark:/12148/bpt6k501995. 'Dumque in Scotia hyemaret, sui multos equos magnos perdiderunt, ob defectum foragii tempore frigoris hyemalis'.

[632] *The Chronicle of Lanercost (1272-1346)*, trans. by Herbert Maxwell (Glasgow: J. Maclehose and Sons, 1913), p. 257; *The True Chronicle of Jean le Bel, 1290-1360*, trans. by Nigel Bryant (Woodbridge: Boydell, 2011), p. 43.

[633] David Stewart Bachrach, 'Military Logistics during the Reign of Edward I of England, 1272–1307', p. 40.

[634] TNA, SC8/168/8357; Bain, II (1884), p. 518.

In addition to adequate nutrition, warhorses would have needed access to farriers for regular shoeing or the replacement of lost shoes. Losing shoes on the march could render them lame – in Chrétien de Troyes' *Perceval* the knight Gawain had to dismount his 'hobbling steed' when it cast a shoe and began to limp.[635] To keep horses well shod English garrisons normally had at least one marshal in attendance whose job was to shoe and administer health care to the horses. At Edinburgh in January 1300 the marshal was named Elias, and he employed a second man to help shoe the 156 horses stationed there.[636] Access to farriers was particularly important on the march due to the distances travelled. Horses on the 1298 campaign covered around 300 miles (482 km) between the muster at Roxburgh on 3 July and Jedburgh on 17 October, a period of just over fifteen weeks.[637] The king's farrier Walter le Ferrator is listed in the corresponding inventory and was still employed under Edward II where he can be found sourcing shoes and nails for the king's campaign in Scotland (1313 – 1314).[638]

In modern practice, horses need shoeing approximately every six to eight weeks depending on the amount of work they receive. The horn of horses' feet grows continuously, so even if shoes have not been worn out, they still loosen over time. They then need to be removed so the feet can be cut back, and the original shoes can then be refitted. This cannot be done indefinitely – once shoes have worn thin they need to be replaced with new ones. The warhorses on the 1298 campaign would have needed reshoeing at least twice between July and October, once at the

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[635] Chrétien de Troyes, *Perceval, or The Story of the Grail*, trans. by Ruth Harwood Cline (New York: Pergamon Press, 1983), p. 154, line 5693.
[636] Bain, II (1884), pp. 289.
[637] The distance has been calculated from the itinerary of Edward I in Bain, IV (1888), pp. 283-84.
[638] *Rotuli Scotiae in Turri Londensi et in Domo Capitulari Westmonasteriensi Asservati,* I (1814), p. 115; Gough, p. 224.

start of the expedition and again sometime around the end of September. With 3400 warhorses assembled at the muster, this meant that some 13,600 horse hooves would have needed attention. How shoeing was carried out on the march is a subject that has not been addressed by historians, but it formed an important part of keeping an army mobilised. Horses can be shod by hot or cold methods: in the first, made-to-measure shoes are forged using a furnace, and in the second prefabricated shoes can be nailed on cold, or without the use of heat. The benefit of hot shoeing is that a shoe can be 'burned' or pressed hot onto the horse's foot so there is no gap between the shoe and foot, making them fit better and less likely to be lost. Cold shoeing means that a shoe is less customised to the individual horse, but it can be replaced much more quickly and with minimal equipment.[639]

Chancery documents show that thousands of prefabricated shoes and nails were made for horses on campaign – in 1299 six carthorses and two carts were purchased from Corbridge to help move the king's household from York to Carlisle, and they carried with them 200 horseshoes and 2000 nails; in the following year, 3000 horseshoes and 50,000 nails costing £59 11s. 1d. were sent to Carlisle; in preparation for the Scottish campaign of 1319 the sheriff of Surrey and Sussex, Peter de Worldham, was ordered to supply 3000 horseshoes and 11,000 nails which were then packed in barrels and carted to London.[640] The only reference to the size of horseshoes is found in Worldham's instructions which stipulated he was to send equal amounts of large, medium, and small shoes to the prince in London (a large set of shoes cost just over 4 ½ d., a medium set 3 ½ d., and a small set 3d.). Although this does not offer precise information on the height or proportions of the

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[639] I would like to express my gratitude to my farrier Adam Fox DipWCF for this information.
[640] Bain, II (1884), p. 297; TNA, E101/99/28.

horses – tall, gracile horses can have smaller feet than medium-sized horses with bigger builds - it does demonstrate that there was a wide variation in the size of their feet. These shoes were intended for horses belonging to the prince's household so the large shoes may have been for either warhorses or large carthorses, and the smaller ones for the more diminutive pack ponies. By ordering shoes in large, medium, and small sizes, it is evident that horseshoes were not made from scratch to fit individual horses. Like most modern farriers, royal blacksmiths ordered a range of sizes and shaped them in a forge to make them fit a wide range of hoof sizes. On the march, particularly in hostile territory, it may have been more expedient to cold shoe horses, in which case the nearest size shoe would have sufficed.

The number of nails bought alongside horseshoes is interesting: shoes of the period were attached to the horse's hoof by six or eight rectangular nails hammered into countersunk slots, so the purchases include an unusually large number of extra nails, in some cases double the requirements.[641] This suggests that many horses had their shoes refitted when they needed replacing, rather than having new sets made, and this meant they were mostly travelling on soft surfaces that did not wear their shoes thin. Extra nails may have been needed to resecure loose shoes, especially if the routes they travelled on were rutted. The large numbers of carts that accompanied an army on the move certainly made travelling conditions difficult: in 1298 the Abbot of St Mary's at York complained about the condition of the roads, stating that they were so bad people on foot or horseback could scarcely pass.[642]

Information on the physical care of horses on the march is scarce but there are indications that they were well looked after. In June 1303 wool cloth was

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[641] Clark, p. 83.
[642] TNA, SC8/340/16016.

purchased to make saddle cloths for four of the prince's destriers whilst he was

leading a division into Scotland, and in the following month Sir Hugh of Leominster, a

royal clerk, was reimbursed 40s. for purchasing a canvas tent at Perth for the

prince's carthorses.[643] More permanent structures were constructed for the king's

horses on campaign in 1306-1307: wood, staples, and nails were sent to Carlisle by

cart to make fifty stalls to house the royal destriers and palfreys.[644] Although the

valuable horses belonging to the aristocracy were provided with various forms of

shelter on campaign, this was no doubt due to their high value. On the march, most

horses were probably hobbled and picketed (tied to a rope strung through iron spikes

hammered into the ground) during rest stops or overnight stays – Froissart mentions

making stakes from cut saplings to tether horses on the Weardale campaign in

1327.[645]

Horse Armour

An essential criterion for men-at-arms in receipt of royal pay was turning up at

muster on *equi cooperti*, or 'covered' horses.[646] This meant that their horses had to

be equipped with some form of defensive barding (body armour). Unlike the 1285

Statute of Winchester which set out the minimum requirements for human armour

and arms, there is no documentary evidence that explicitly states how or to what

extent warhorses were meant to be barded.[647] The inspection of horse armour was

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[643] Bain, II (1884), p. 366.
[644] TNA, E101/98/35.
[645] Jean Froissart, *Chronicles*, ed. and trans. by Geoffrey Brereton (Harmondsworth: Penguin, 1985), p. 50. Cavalry horses in the First World War were picketed overnight, see Army Horse Care, National Army Museum (n.d.) <https://www.nam.ac.uk> [accessed 7 November 2023].
[646]Ayton, p. 89; Morris, p. 83.
[647] *The Statutes of the Realm,* ed. by Alexander Luders and others, 11 vols (London: Dawsons of Pall Mall, 1810-1828), I (1810), pp. 97-98. Men holding land worth fifteen pounds were expected to be equipped with a hauberk, iron helm, and a horse.

certainly carried out as part of the horse appraisal process - in France, it included an inspection of each horse's 'harnois', or harness, which no doubt included its barding - but what qualified a horse as 'covered' is unclear.[648] What amounts and types of barding were needed to pass inspection and did this differ according to the rank of the men-at-arms? Without explicit documentary evidence, such questions are difficult to answer, but an analysis of royal armoury inventories and manuscript images can offer insights into what kinds of barding may have been considered appropriate.

A roll of purchases for a royal tournament at Windsor in 1278 includes a range of horse equipment including barding for their heads, chests, and hindquarters.[649] Although these were purchased for a tournament rather than for warfare, the fundamental purpose of barding was to protect horses from injury and therefore it would have been similar in form and materiality to the barding used on warhorses.[650] The roll includes leather peytrals which were designed to protect the horses' chests, and six cruppers made from horse hide. These were for covering the horses' hindquarters. Also purchased were thirty-eight leather shaffrons. These fitted over a horse's face to help protect the cheeks, nasal bone, and poll (the part immediately between or behind the ears) areas. An illustration in a Spanish manuscript made in 1280 is an early European picture of horses in battle wearing leather shaffrons (Figure 6.2).[651] The horse on the left has a shaffron fitted over mail, the other horse

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[648]*Ordonnances des Rois de France de la Troisième Race, Recueillies par Ordre Chronologique*, p. 68.

[649] S. Lyons, 'Copy of a Roll of Purchases made for the Tournament of Windsor Park, in the sixth year of King Edward the first, preserved in the Record Office at the Tower', *Archaeologia, or, Miscellaneous Tracts Relating to Antiquity,* XVII (1814), 297-310. Inventories of the Tower armouries in the 1340s included 15 peytrals made of 'quirboillo', or 'cuir bouilli', see R. T. Richardson, 'T*he Medieval Inventories of the Tower Armouries 1320–1410'* (unpublished doctoral thesis, University of York, 2012), p. 95.

[650] Pyhrr and others, p. 9.

[651] This can be compared to the English chess piece of a knight made c. 1350. The knight's horse is depicted wearing a full mail bard with a shaffron (which could be leather or plate)

is wearing one over a caparison. The shaffrons have external decorations in gold (the lip of one can be clearly seen on the shaffron on the right) that replicate those on the riders' helms. These might similarly be made of thin strips of plate and are distinctive as they are placed on the horses' vulnerable nasal bones and polls. This suggests that the strips served as both decorations and as reinforcements.


Figure 6.2: Leather shaffrons, Spain, 1280. Madrid, El Escorial Royal Library, Escorial MS T. I. 1 Les Cantiques de Sainte Marie, fol. 63

placed over its head: *Chess Piece in the Form of a Knight, c.* 1350, ivory, The Metropolitan Museum of Art, New York, <https://www.metmuseum.org> {accessed 21 March 2024].

The material used to make the shaffrons in the image (and also the horse barding purchased for the Windsor tournament) was perhaps *cuir bouilli*, a leather that was boiled in oil or water to soften it so it could be shaped. Once cooled, it became very tough and rigid.[652] Evidence of this kind of leather treatment can be found in the inventories of the Tower armouries in the 1340s which include fifteen peytrals specified as made from *quirboillo*, or *cuir bouilli*.[653]

Due to the nature of the material, surviving examples of European leather horse barding are extremely rare. There is only a single extant item in English museums, and this is a crupper that dates to the early sixteenth century.[654] Despite being of later manufacture, its form and function is probably still similar to the cruppers used in the earlier centuries. The crupper in the Armouries is made from a single piece of *cuir bouilli* shaped to fit over a horse's hindquarters and tailbone, and it was originally lined with canvas. It is 4 mm thick at the hind end, 2.5 mm to 3 mm at the fore-end and weighs 2.72 kg. Its surface area is approximately 0.5 metres square.[655] Holes around the object's outer edges suggest that *flanchards*, or side portions (designed to protect a horse's flanks and thighs) may have once been attached to the crupper using laces. Traces of paint on the upper surface indicate that at one time it was highly decorated, possibly with heraldic motifs, and may have been made for a tournament. The use of *cuir bouilli* for horse barding had several benefits: it was light in weight, was quicker to make than steel or iron, and therefore

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[652] Charles John Ffoulkes, *The Armourer and His Craft from the XIth to the XVIth Century* (London: Methuen, 1912), p. 97.

[653] Richardson, 'The Medieval Inventories of the Tower Armouries 1320–1410' p. 95.

[654] Crupper, *c.* 1540, leather, Royal Armouries Museum, item VI.87, Study Collection. A similar leather crupper dating from the early sixteenth century and believed to be of Flemish or German origin is in the Metropolitan Museum, New York, accession number 26.235.1.

[655] Thanks must go to Eleanor Wilkinson-Keys, Curatorial Assistant of the Arms and Armour at the Royal Armouries, Leeds, for her assistance in measuring and weighing the crupper.

relatively less expensive than mail or plate.[656] For men-at-arms of the lower ranks mounted on rounceys, leather barding may have been an affordable way to qualify their horses as covered - a crupper made for the tournament at Windsor was made from half a skin of horse hide and cost two shillings.

Illustrations of warhorses wearing mail armour can be found in manuscripts throughout the thirteenth and fourteenth centuries. An illumination in a mid-thirteenth-century English copy of the *Chanson d'Aspremont* is an early example, but useful as it illustrates the versatility of mail barding (Figure 6.3).

Figure 6.3: Mail horse armour, England, 1250. Cambridge, Cambridge University Library, MS O.9.34 Thomas of Kent, Romance of Alexander, fol. 3ʳ

The image is of a battle scene in which the horse on the left is wearing a full mail covering that covers its head, neck, and body to just below its belly, and the

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[656] Ffoulkes, p. 97.

horse on the right wears only a mail crupper. The full mail cover is split into two main parts: a crupper and a front piece. The head section may have been attached as a separate piece. This is suggested by a change in the direction of the mail rings and what appears to be a double section of rings just behind the horse's ears. This would have made it easier to put on the horse and it may have been attached to the front section by straps or laces. The separation of the front and hind sections allowed room for the saddle, and it also enabled the rider's legs and spurs to maintain contact with the horse's sides - this was important if the horse had to be urged forward.

The separation of barding into different sections was an advantage as it made it easier to fit and meant pieces could be worn separately or in various combinations, depending on a knight's personal preferences or financial circumstances. It meant that even an impoverished knight might be able to afford at least a mail crupper if this qualified his horse as 'covered'. The image is also interesting as it illustrates that the bellies and legs of horses were left unprotected. There are no contemporary images of horses with barding wrapped around their stomachs or limbs and this was due to practicality. Bellies would have been difficult to protect due to the movement of a horse's legs and the straps needed to keep saddles secure; legs had to be left unencumbered so that horses could run and turn quickly.

To what extent was mail horse armour used? Documentary sources suggest that some men of high status kept at least a couple of sets of mail covers in their stables. In 1277 orders were given to the mayor and sheriffs of London to allow Hugh de Oddingeseles to leave the country on the king's service with his armour and 'two iron horse coverings'; in the same year royal accounts included 6s. to pay for

linen to place under the mail coverings of two of the king's destriers.[657] In 1313 the

estate belonging to Richard de Gravesend, Bishop of London, included two

cooperturis de ferro pro equis, and in 1322 the inventory of Sir Richard Mortimer

included coverings of mail for five horses alongside 'side- and breast-pieces of

leather', which may have been used in conjunction with the mail to afford greater

protection.[658]

Mail continued to be used after the reign of Edward II: mid-fourteenth-century

Tower inventories include seven pieces of worn-out mail barding for horses, another

made from Lombard mail, and a single horse covering made from jazerant mail (mail

between fabric or leather) purchased from Caen.[659] The popularity of mail horse

armour was likely due to the benefits it afforded: it was a highly flexible material that

allowed a horse to be fully mobile; it had the potential to be adjusted to suit different-

sized horses by adding or removing links, and compared to leather or plate, it was

easy to repair.[660] However, making mail armour was a time-consuming process and

this meant it must have been more costly than leather barding.[661] A knee-length mail

shirt for a man might involve up to 50,000 links and take over three months to make,

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[657] *CCR*, Edward I, 1272-1279, p. 372; Morris, p. 53. This may be the same Hugh Doddingseles that appears in the inventories for the second Welsh war (TNA, C47/2/7, m. 2).

[658] *Account of the Executors of Richard Bishop of London 1303 and of the Executors of Thomas Bishop of Exeter 1310*, ed. by W. H. Hale and H. T. Ellacombe (London: Camden Society, 1874), p. 136.; Pyhrr and others, p. 10.

[659] Richardson, 'The Medieval Inventories of the Tower Armouries 1320–1410', pp. 46; 95.

[660] Ian Peirce, 'The Knight, his Arms and Armour in the Eleventh and Twelfth Centuries', in *The Ideals and Practice of Medieval Knighthood: Papers from the First and Second Strawberry Hill Conferences*, ed. by Christopher Harper-Bill and Ruth Harvey (Woodbridge: Boydell, 1986), pp. 151-64 (p. 157).

[661] I have been unable to find sources for the cost of horse mail, but in 1322 a hauberk (a shirt of mail for a man) was valued at six pounds: S*outh Lancashire in the Reign of Edward II as Illustrated by the Pleas at Wigan Recorded in Coram Rege Roll no.254*, ed. by G. H. Tupling, Chetham Society, vol. 1 (Manchester: published for the Chetham Society, 1949), p. 111.

so a full covering of mail for a horse would have taken as much or perhaps

considerably more labour depending on the size of the horse.[662]

Horse armour made from either linen or plate may also have been used. The

horse in the background of the image from the *Chanson d'Aspremont* is depicted as

wearing a caparison that is folded in thick rolls around its neck. This is a departure

from the usual types of caparisons seen in manuscript images. They are usually

depicted as made of light, flowing material. It is possible that the textile worn by the

horse in the illustration was meant to represent a heavily padded covering similar in

constitution to a gambeson, a defensive jacket worn alone or under armour by men.

A thickly padded textile would have offered a measure of protection for the horse,

and this could suggest that some covered horses might have been barded using soft

armour made from padded textiles in lieu of leather or mail. Pieces of plate may also

have been worn by horses, probably as an accompaniment to other types of barding.

Full plate armour for horses did not appear until the fifteenth century but individual

pieces of plate are believed to have first appeared during the last half of the

thirteenth century in the form of shaffrons.[663] By the fourteenth century these appear

in Tower armoury accounts: in 1325 six shaffrons of plate and a pair of plate

flanchards are listed; in 1340 the accounts record that Henry Grosmont (Duke of

Lancashire *c*. 1310-1361), a regular campaigner under Edward III, received a pair of

horse coverings and a shaffron made from steel.[664]

Fourteenth-century manuscript images depict horses wearing small pieces of

plate such as shaffrons and peytrals, although it is often difficult to differentiate

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[662] Alan R. Williams, *The Knight and the Blast Furnace: A History of the Metallurgy of Armour in the Middle Ages and the Early Modern Period* (Leiden: Brill, 2003), p. 43.
[663] Pyhrr and others, pp. 9-10.
[664] Richardson, 'The Medieval Inventories of the Tower Armouries 1320–1410', p. 92.

between steel and leather. For example, in a Flemish copy of the *Romance of Alexander* (*c*. 1338) horses are depicted in a battle scene wearing shaffrons, peytrals, and crinets (the latter being protection for the horses' crests). The silver colour and straight lines of the shaffron on the left-hand horse suggest this item is possibly made from plate, whereas the brown colour and wavy lines of the shaffron on the right-hand horse are more suggestive of *cuir bouilli* (Figure 6.4).

Figure 6.4: Horses barded with shaffrons, peytrels, and crinets, England, 1338-1410. Oxford: Bodleian Library, MS Bodl. 264, fol. 84^v

In 1338 and 1353 the Tower armouries included a pair of horse eye defences and a pair of horse ear defences. Images of horses wearing shaffrons incorporating basket- or sieve-like eye coverings appear in Europe from the second half of the fourteenth century, and the Warwick shaffron (discussed in Chapter Two) shows

signs of once having ear defences. It is interesting that in the Tower accounts the eye and ear defences are listed individually as this suggests that these items were not fixed to a shaffron but could be attached or removed whenever the need arose. They were perhaps laced in place and may have been used in war but removed for the relatively safer environment of the tournament.[665] Eye guards would be a useful way of protecting horses' eyes from sharp weapons on the battlefield, but considering the number of monocular horses in the inventories they did not appear to be regularly employed prior to the mid-fourteenth century.

How effective was horse barding against weapons? This very much depended on its materiality, the amount of padding placed beneath, and the kind of weapons used against it. Tests of the efficacy of armour have yielded some interesting results, although it must be borne in mind that experimental archaeology is constrained by using reproduction armour that can imitate, but not replicate, the various types and qualities of medieval armour. Experiments to test the efficacy of leather armour against arrows were carried out in 2012 by experimental archaeologist David Jones. Longbows of 76 lbs and 82 lbs draw weights were used to shoot different types of arrowheads at a combination of leather and linen padding.[666] Modern soling leather weighing 5.47 kg/m² and 5.5 mm in thickness was used in conjunction with unbleached linen weighing 0.35 kg/m². Although not *cuir bouilli,* the soling leather was up to 1.5 mm thicker than the crupper at the Royal Armouries. The compression

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[665] For images of basket eye defences see BNF, Français 2813 fol. 212ᵛ (*c.* 1375-1380); BL, Harley MS 4431, fols 112; 135 (*c.* 1410).

[666] David Jones, 'Arrows against Linen and Leather Armour'*, Journal of the Society of Archer Antiquaries*, 55 (2012), 74-81. Of the eight types of arrowheads used in the experiments only the results using arrowheads C, D, and E (London Museum Types 1, 2 and 7) are discussed in this thesis as they are contemporary to the period in discussion. For a seminal work on warbows see Matthew Strickland and Robert Hardy, *The Great Warbow* (Stroud: Sutton, 2005), pp. 266-83.

of the fibres during the manufacturing process of soling leather makes it very durable. It was similar in weight to the Armouries' crupper, so in composition and resistance it can be said to be roughly comparable to *cuir bouilli.*

The results showed that arrows shot from a distance of 9 m penetrated one layer of unpadded leather to a depth of between 148 mm and 171 mm.[667] This would have caused a deep wound for both man and horse. Three layers of leather were then tested, and the results showed that this was much more resistant, with arrows penetrating only between 16 mm and 28 mm. Further tests were carried out using a single layer of leather backed by 28 layers of linen (approximately 25 mm in total thickness) and the penetrative effects of the arrows were similar. The experiment suggests that multiple layers of leather or one layer of thickly padded leather would have been needed to provide some measure of protection against arrows, but even so, Jones concluded that these were only 'arrow resistant', not 'arrow proof'. Interestingly, Jones also noted that the arrows that penetrated the leather were extremely difficult to remove as the leather 'gripped the shaft tightly'.[668] This could potentially cause problems: arrows sticking out of horse bards would impede the movement of the horses, and if they had also pierced the flesh beneath then the barding would have been effectively pinned to their bodies, making it difficult to remove to tend to their wounds.

An experiment to analyse the efficacy of mail horse armour against arrows was conducted in 2022 by Jones and the author of this thesis.[669] For this experiment

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[667] David Jones, 'Arrows against Linen and Leather Armour', 74-81 (Table 3, p. 79).

[668] David Jones, 'Arrows against Linen and Leather Armour', 74-81 (p. 79).

[669] David Jones and Emma Herbert-Davies, 'Evaluation of Mail Horse-Armour', *EXARC* (2022), 1-9. The tests were not carried out on unpadded mail as this has already been shown to be easily defeated by arrows, see Williams, 62-70; David Jones, 'Experimental Tests of Arrows Against Mail and Padding', *Journal of Medieval Military History,* 28 (2020), 143-171 (p. 168).

reproduction long bodkin arrowheads of type M8 were used as this type is frequently

found in thirteenth and early fourteenth-century archaeological sites.[670] These were

shot by Jones using a longbow made from yew with a 72 lb draw weight. This was

considered to be consistent with the draw capacity of bows typically used during the

period.[671] An extant horse mail crinet dating to the fourteenth century was examined

to assess its construction and the dimension of its mail rings.[672] These observations

were used by Jones to make a similar piece of mail weighing 7.95 kg/m². This was

placed over various layers of upholstery linen (0.44 kg/m²) and the ensemble was

attached to a foam target. Jones conducted the tests from a range of 9 m and

measured the depth of penetration of the arrows from the last layer of linen. The

results demonstrated that mail with between three and eight layers of linen were

penetrated to a mean depth of between 45.2 mm and 24.8 mm – this can be

compared to the tests above in which a single layer of leather over 28 layers of linen

proved on average more resistant. More effective protection was gained from mail

when the number of linen layers was substantially increased: with 24 layers of linen

the arrowheads only penetrated to a depth of 5.2 mm. This was around 66 per cent

more effective than Jones's tests using thickly padded leather. The results show that

the protective quality of mail was proportionally increased by the addition of linen

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[670] Oliver Jessop, 'A New Artefact Typology for the Study of Medieval Arrowheads', *Medieval Archaeology* (1996), 192-205 (p. 199). Sites where M8 arrowheads have been found include Rhuddlan Castle, Wales, and Urquhart Castle, Scotland.
[671] For example, a thirteenth-century short war bow found in Waterford, Ireland, was estimated to have a draw weight of 60 lbs: Jeremy Spencer, 'A Short Warbow Examined', *Journal of Archer-Antiquaries* (2107), 100-03 (p. 100). This can be compared to the longbows found in the sixteenth-century wreck of the Mary Rose which had draw weights of 100 lbs or more: Strickland and Hardy, p. 17. It is therefore not unreasonable to suggest that the 72 lb bow used in our experiment was broadly representative of the bows used by English, Welsh, and Scottish forces during the period covered by this thesis.
[672] Crinet, 1317-1399, mail, Royal Armouries Museum, item 2021 (1).

layers, and that mail with linen padding was more resistant to arrows than similarly padded leather.

However, using multiple layers of linen under mail had its drawbacks. A horse can carry between 20 to 35 per cent of its bodyweight, so if is 148 cm in height and weighs approximately 450 kg, its maximum load bearing capacity would be in the region of 150 kg.[673] The weight of a fully armed and armoured man-at-arms and his horse's harness (saddle and bridle) was approximately 122 kg, so barding would have had to weigh under 28 kg to prevent a horse being overloaded.[674] I measured a 148 cm horse weighing around 450 kg and calculated it would need at least 3 m² of mail to cover its body, chest, neck and head (the equivalent to wearing a full bard such as the one worn by the fully mailed horse in Figure 6.3). This mail would weigh around 24 kg and therefore to keep horses within their carrying capacity only 4 kg of linen – the equivalent to three layers - could be added beneath the mail. The weight of barding was an important factor for men-at-arms to consider as overloading warhorses would have a negative effect: it would reduce the horses' capacity to move quickly, leaving them and their riders vulnerable, and the horses would quickly become exhausted if they had to withstand a sustained period of exercise. To properly protect warhorses, they would have needed full mail bards over 24 layers of linen, but the combined weight of the barding would have weighed in the region of 56 kg, twice the load horses could reasonably bear. If leather barding were used the results would be similar: a full bard using the soling leather used in Jones's earlier experiments would have weighed just over 16 kg, leaving room for only eight layers of 0.44 kg/m² upholstery linen. In summary, the amount of armour horses could carry

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[673] David Jones and Emma Herbert-Davies, pp. 3-4.

[674] Using bigger horses would not necessarily have solved this problem as they would need proportionally larger and therefore heavier pieces of barding.

limited how well they could be protected, and this meant that some arrows would have inevitably caused serious wounds.

In addition to considering the weight warhorses had to bear, men-at-arms would have had to take into consideration the heat-inducing properties of barding when choosing their horse armour. The greater muscle mass of horses means they overheat more quickly than humans and multiple layers of padding posed the risk of thermal overload, especially if horses were required to expend large amounts of energy in combat or on raids.[675] The catastrophic effects of hyperthermia did not go unrecognised: a reference to the continuous need for remounts in a tournament due to horses overheating can be found in the chivalric poem *Moriz von Craûn* (*c.* 1200).[676] Remounts may have been available in battle – rules for Knights Templars gave instructions for squires to follow knights into battle with spare horses – but even so, horses carrying too much weight or heat-inducing padding would have been severely compromised in their ability to move athletically, or to be ridden for any length of time.[677] Compromises between protection and utility must therefore have been made. The practical alternatives were to opt for less protection, to keep horses out of close range of archers, and to keep the horses moving to make them harder targets. Experiments using padded mail would benefit from further testing to see if penetration was greatly affected by shooting from longer ranges or different angles, or by using arrows of different natures or heads; or if closely woven linen or mail with

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[675] For the effects of thermal overloading see M. Lindinger, *Sweating, Dehydration and Electrolyte Supplementation: Challenges for the Performance Horse*, Proceedings of the 4th European Equine Health & Nutrition Congress, April 18-19 (2008) <https://www.equine-congress.com> [accessed 22 November 2023].

[676] R. Harvey, *Moriz von Craûn and the Chivalric World* (Oxford: Clarendon Press, 1961), p. 226.

[677] *The Rule of the Templars: The French Text of the Rule of the Order of the Knights Templar*, trans. by J. M. Upton-Ward (Woodbridge: Boydell, 1992), pp. 63; 183.

smaller diameter rings would prove more resistant.[678] However, this does not detract

from the fact that the experiment serves to highlight the difficulties faced by men-at-

arms in providing adequate protection for their horses against archers.

Despite the obvious weakness of padded mail against arrows, it did appear to

be more effective against other types of weapons. Alan Williams conducted other

tests using a lance head against mail over a quilted linen jack.[679] The results showed

that the lance had to impart an energy of 200 J (joules) to break the rings in the mail,

but at this level of impact, the mail was not penetrated. To put this energy in

perspective it can be compared with tests carried out to record the energy generated

by lances. An experiment was carried out by a team of mounted jousters using

modern lances made of solid pine wood and 3.6 metres in length. Each jouster rode

towards a target and struck it with their lance. The results showed the lances had an

impact energy of between 90 to 200 J.[680] This implies that horses wearing padded

mail armour could withstand a lance strike although if hit hard enough they could still

suffer blunt force trauma or be felled.[681] Experiments with crossbows, swords and

axes against mail would greatly contribute to a study of horse armour. Early studies

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[678] For an informative discussion of armour, arrow penetration, and arrow wounds see Strickland and Hardy, pp. 266-83.

[679] Williams, p. 942. Rather frustratingly, Williams's experiments lack essential information. For example, he does not provide the ring diameter or wire gauge of the mail, or a description of the lance head. This somewhat limits the usefulness of his experiments.

[680] Alan Williams, David Edge, and Tobias Capwell, 'An Experimental Investigation of Late Medieval Combat with the Couched Lance', *Journal of the Arms and Armour Society*, 22 (2016), 1-39 (p. 6). These results were obtained without the use of an arret (a lance rest that increased impact energy but was introduced *c.* 1370, somewhat later than the period covered by this thesis). It was also noted that using pointed or coronel lance tips made little difference to the results.

[681] Rules for jousting in fifteenth-century Iberia expressly forbade striking the head and neck of a horse with a lance due to the potential of seriously hurting or killing the rider. A powerful enough blow to the could bring both man and horse to the ground. See Fallows, pp. 337; 477.

suggest that mail was ineffective against stabbing and cutting actions from swords,

but proper scientific experiments have yet to be conducted.[682]

Two final questions need to be addressed: how effective was plate horse

armour, and would the momentum of the horse effect the penetration of arrows? The

early appearance of pieces of plate for horses' faces and chests suggests that there

was particular concern over protecting the parts of a horse that would be directly

facing the enemy in a charge. The earliest extant English example of a horse plate

defence survives in the form of the Warwick shaffron in the Royal Armouries.[683] The

shaffron is believed to have been made in the late fourteenth or early fifteenth

century, is 1.5-2 mm in thickness, and would originally have been padded to make it

more comfortable for the horse and to provide extra protection.[684] The shaffron

shows signs of damage attributable to warfare: there is a dent above the left eye,

possibly made by a lance or sword strike; a cut in the area covering the horse's

nasal bone that has sliced through the plate and is indicative of a downwards blow

from a bladed weapon; a dent above the nostril area, and a puncture point

(measuring 1.5 mm x 2 mm x 2 mm) that has penetrated the plate in the area

covering the horse's forehead and may have been made by the tip of a bodkin

arrow.[685] Tests using longbows and bodkin-headed arrows have demonstrated that

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[682] For an unscientific but nonetheless informative article on the efficacy of swords against mail see John Clements, 'Swords Against Armour', *Medieval Warfare*, I (2011), 48-52.
[683] Warwick Shaffron, *c*. 1400, iron, Royal Armouries Museum, item VI.446.
[684] The shaffron weighs 4 kg, which again would have to be figured in to the overall weight borne by a horse.
[685] Eaves and Richardson, p. 219; Creighton, Outram and Wilkinson-Keys, p. 8. I owe a debt of gratitude to Eleanor Wilkinson-Keys, Curatorial Assistant of the Arms and Armour at the Royal Armouries, Leeds, for providing approximate measurements of the thickness of the shaffron plate. These measurements were taken from the ear holes, edges of the cheek plates and the right side of the bottom of the nose. Unfortunately, it was not possible to obtain accurate measurements of the thickness of the plate at the sites of damage. A forensic examination of the shaffron would help to provide this information and could also provide an indication of how far the arrowhead penetrated the plate.

plate up to 2 mm in thickness could be penetrated by an arrow delivering sufficient

kinetic energy, so the puncturing of the Warwick shaffron is perhaps not altogether

surprising.[686] Although the padding probably prevented the weapons from breaking

the skin of the horse their impact would have stunned the animal, and it is possible

that the blunt force trauma to its nose would have fractured its nasal bone.[687]

Tests on the efficacy of arrows are normally carried out on stationary targets

but it is unlikely that mounted men-at-arms would have remained static on the

battlefield. Aside from the fact a galloping horse would be more difficult to hit would a

horse's momentum affect the penetrative effect of arrows? This question was

answered by Stretton who conducted further tests by mounting the breastplate on a

platform. This was then pulled towards Stretton at 20 mph to simulate the speed of a

charging horse.[688] The results showed that as expected, the arrows defeated the

plate, but the compounded effect of the momentum of the 'horse' caused the arrows

to penetrate up to 50 per cent further than when it was static. This demonstrates that

armoured horses would have been more vulnerable to catastrophic wounding if they

were struck whilst charging towards a line of archers.[689]

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[686] Mark Stretton, 'Experimental Tests with Different Types of Medieval Arrowheads, *Secrets of the English Warbow*, ed. by Hugh D. Soar (Yardley: Westholme Publishing, 2006), pp. 127-52 (p. 132). For more examples of arrows defeating plate see Peter N. Jones, 'The Metallography and Relative Effectiveness of Arrowheads and Armor During the Middle Ages', *Materials Characterization*, 29 (1992), 111-17 (p. 116) and Williams, p. 927; Strickland and Hardy, pp. 276-78. Strickland points out that the depth of penetration was dependent on several factors: the quality of the plate; the amount of energy delivered by the arrow; range and angle at which it was shot (pp. 266-83).
[687] Thanks must go to my equine vet, Sandy Baird, for a conversation on the theoretical damage that could be caused by blows to various points of a horse's head.
[688] Stretton, p. 143.
[689] David Jones was kind enough to offer a more in-depth explanation of how momentum affected the impact energy of Stretton's arrows: 'The arrow (125 g) has a speed of 134 ft/s (40.84 m/s), and a KE (kinetic energy) of 104.24 joules. If the horse was galloping towards the archer at 20 mph (8.94 m/s) then the closing speed would be 49.78 m/s and the impact KE would be 154.88 joules, almost 50% more. If the horse was galloping away from the archer, then the closing speed would be 31.9 m/s and the impact KE would be only 63.60 joules: email correspondence David Jones to Emma Herbert-Davies, 15 February 2024. It

To summarise, the horses presented to the king's officials during the appraisal process would have been equipped with barding made from leather, mail, textiles, small pieces of plate, or a combination of all four. The materiality of the barding would have depended on the status and financial means of individual men-at-arms: knights would have used padded mail and perhaps some small pieces of plate; whereas sergeants might have turned to more affordable horse armour made from padded textiles or *cuir bouilli*. The extent to which the horses' bodies needed covering to qualify them as *equii cooperti* remains unclear, but it was certainly in the interests of their riders to have them as fully covered as possible – this would have included shaffrons, peytrals, crinets, cruppers, and *flanchards*. The weight and thermal effects of horse armour meant that circumstances probably dictated how much protection was used: full barding made from padded mail might be suitable for a battle where remounts were at hand, but for mounted raids that required hard riding over longer distances a thinly padded crupper and plate shaffron would be a more practical option. Although the requirement for covered horses implies that protection was considered important for warhorses, it did not make them entirely immune from the effects of weapons.

The Terminology of Horse Losses

Considering the somewhat limited protection available to warhorses it is probably of little surprise that many succumbed to death or injury in combat. To find out the fate of many of the warhorses taken on campaign we must return to the horse inventories explored in Chapter Two. These provide useful information on the different reasons

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would be useful to carry out similar tests on a laterally moving target or one being pulled away from an archer so that Stretton's results can be properly compared.

why claims were put forward for horses. On receipt of a claim the date on which the horse was lost, the reason for its loss, and sometimes the location was recorded alongside its description in the corresponding horse inventory. Several different terms were used to describe what had happened to the animal: *mortuus, interfectus, redditiur ad karvannum*; *redditur ad elemosinam* and *perditus*. The two inventories raised for Edward I's second campaign into Scotland provide a useful case study to analyse the meaning of these terms. A total number of 1356 warhorses are enrolled in the two horse lists and 252 of these horses - almost 20 per cent - were recorded as having died or become incapacitated in some way during the campaign (Figure 6.5).
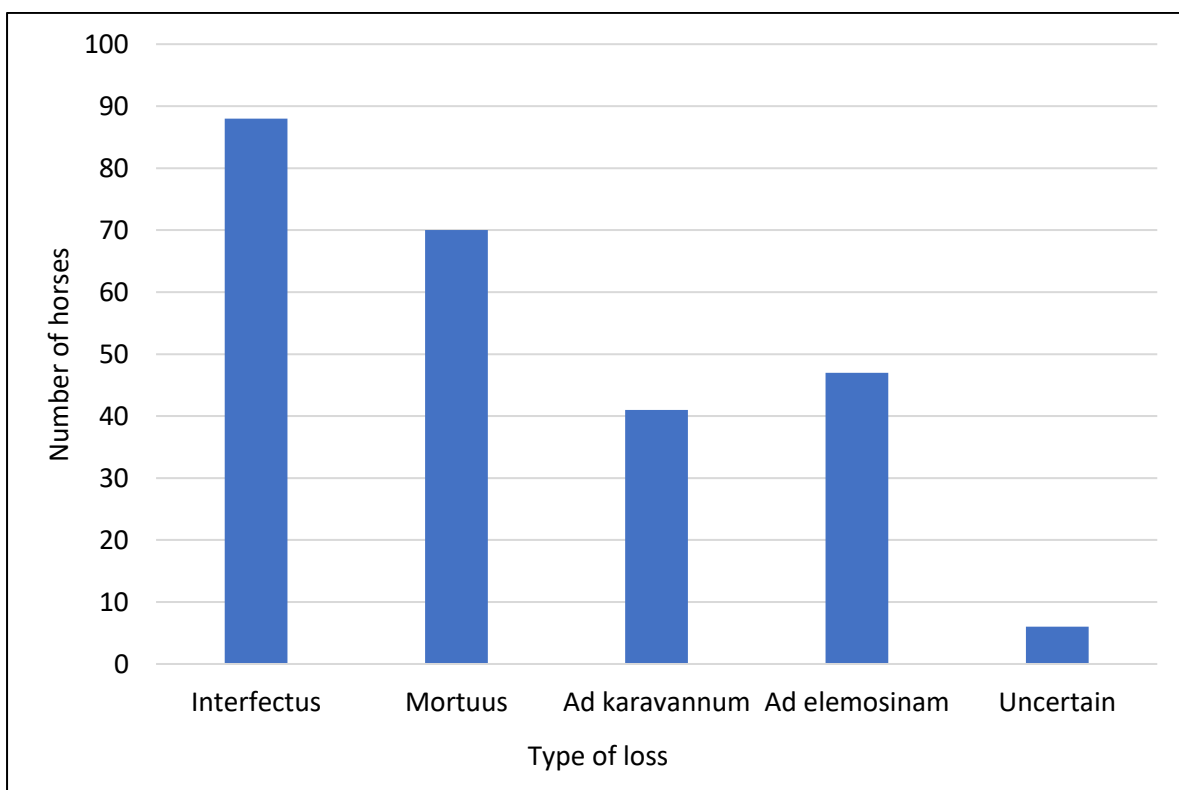

Figure 6.5: Horse losses in 1298[690]

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[690] Taken from Gough, pp. 164-235.

Mortuus and Interfectus

An analysis of the inventories reveals that over the course of the campaign 88 horses were described as *interfectus* and 70 as *mortuus*. The latter term is used consistently throughout the inventories and indicates that the horses have died. Unfortunately, no details concerning the causes of death are ever supplied, perhaps because this information was considered superfluous to what were essentially financial records. Some deaths clearly occurred as a result of fighting: 25 of the horses listed as *mortuus* in the 1298 inventories are recorded as having died in the Battle of Falkirk on 22 July. On the same day, a further 85 horses were listed as *interfectus*. This term also denotes death, so the total number of horses that died during the battle comes to 110, or just over 8 per cent of appraised horses. It is possible that the clerks recording horse losses simply conflated *mortuus* and *interfectus*, but, interestingly, the latter is almost exclusively applied to those horses that died during the battle and is rarely found in other inventories of the period.[691] Were clerks using *interfectus* - a term that implies being slain – to denote horses that had been killed outright by the enemy?[692] A *restor* account raised in 1300 appears to make this distinction: of the 160 horses listed as having been lost many are recorded as *mortuus,* but 3 are specifically listed as *interfecti per Scot',* or killed by the Scottish forces.[693] What of the horses described as *mortuus* in the Battle of Falkirk? If these had not been slain on the battlefield, they must have met their deaths more indirectly, perhaps by sustaining serious enough injuries to warrant being dispatched. Euthanasia would have sometimes been necessary: severely wounded horses were

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[691] There are three exceptions: two horses are listed as 'interfectus' at Falkirk a few days after the battle, and another is recorded 'interfectus' in the Forest of Selkirk the following October.

[692] 'Interficio', in *Logeion*, *Latin and Greek Dictionary*.

[693] Topham*,* pp. 175; 177.

routinely put down in the American Civil War, and one of the jobs of English regimental farriers in the First World War was to humanely destroy horses that could not be saved.[694] However, even if the clerks at Falkirk were for some unknown reason using two different terms to describe horse deaths in battle, the vagaries of scribal terminology mean that such discrimination is not always consistent in other inventories. For example, 24 horses under John de St John, including 3 destriers, are recorded as *mortuus* whilst pursuing Robert Bruce in Galloway in 1307, and these can hardly have all been put down due to injury.[695] What is clear is that *mortuus* and *interfectus* both indicated that horses had died.

A closer look at the numbers and types of horses that died in the Battle of Falkirk reveals that 18.42 per cent of destriers enrolled in the inventories were lost, compared to 10.98 per cent of *equi* and 6.92 per cent of rounceys.[696] This is perhaps unsurprising as destriers were trained to lead the charge and so bore the brunt of any engagement, but may also indicate that these horses were targeted in attempts to bring down their elite riders (who could potentially be ransomed). The role of men-at-arms in the battle was to charge and rout the enemy. Three divisions firstly attempted to break the ranks of Scottish infantry who were described as arranged in circular formations, consisting of tightly packed rows of infantry with each man holding a long spear directed outwards.[697] According to the chronicler Walter of

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[694] Gervase Phillips, 'Writing Horses into American Civil War History', *War in History*, 20, 160-181 (p. 180); Army Horse Care, National Army Museum.

[695] TNA, E101/612/12, m. 5.

[696] These figures differ from those given by Gladitz, who states there were 5 destrier deaths in the battle, and Michael Prestwich, who counted 6 destrier deaths. Careful scrutiny of the sources reveals that 7 destriers died. These were ridden by John Botetourte; Robert FitzPayne; Henry Beaumont; Eustace de Hache; Thomas of Leybourn; John de la Mare, and Robert Montalt (see Gough, pp. 166; 171; 172; 191; 194; 203; 209). Gladitz, p. 160; Prestwich, '"Big and Beautiful": Destriers in Edward I's Armies', p. 14.

[697] Walter of Guisborough, *The Chronicle of Walter of Guisborough*, ed. by Harry Rothwell, Camden Society, 3rd series, 89 (London: Royal Historical Society, 1957), p. 327.

Guisborough, the massed groups of Scottish infantry held out against the charge and 'although the horsemen could not enter through the multitude of lances, they smote the outside, and pierced many of them with their lances.[698] This suggests that the mounted divisions attempted to push home their advantage, and if so some horses might have been injured in the attempt to break enemy ranks. The Chronicle of Lanercost recounts a similar situation at Bannockburn some sixteen years later, when 'the great horses of the English charged the pikes of the Scots, as it were into a dense forest' and as a consequence 'there arose a great and terrible crash of spears broken and of destriers wounded to the death'.[699] At Falkirk, the king's own division was closely involved in the battle, possibly once the Scottish troops had been routed. In the thick of the fighting were several eminent men: Hugh Despenser, who lost 13 of his retinue's horses including three *equi* belonging to his knights; Thomas, 2nd Earl of Lancaster, who lost a total of 11 of his retinue's mounts; Eustace de Hache, who lost his destrier and five other horses in his retinue, and John Botetourte who also lost his destrier and four of his sergeants' horses.

Horses were as much of a target as the men who rode them: John Barbour, the author of *The Bruce,* gives an account of the Battle of Loudon Hill (10 May 1307) in which 'they impaled both men and horses with spears that sheared sharply'; at Bannockburn seven years later the enemy infantry 'with spears gave wide wounds to the horses […] some would shoot out of their force, stab horses of those who attacked them and bring down men'.[700] Horses made obvious targets due to their size, but the main purpose of bringing them down was to unhorse their riders so

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[698] Walter of Guisborough, p. 328. 'Dum non possent equestres ingredi per multitudine lancearum percusserunt exteriores et perforaverunt plures lanceis suis'.
[699] *The Chronicle of Lanercost* (1272-1346), p. 166.
[700] Barbour, pp. 306; 434.

men-at-arms lost the tactical advantages afforded by their mounts' height and speed. Although barded, the horses' stomachs and legs were most vulnerable to weapons as these areas were left unprotected. An account of the Battle of Bouvines in 1214 between the French army and a host led by the Holy Roman Emperor Otto IV included graphic descriptions of horses wounded in their stomachs and laid prostrate with their hocks severed; and Sir Thomas Grey, author of the fourteenth-century chronicle *Scalacronica*, described how horses, including the destrier belonging to Edward II, were disembowelled by Scottish spears during the Battle of Bannockburn in 1314.[701] As the damage on the Warwick shaffron suggests, horses were also struck with arrows and bladed weapons such as swords and axes.[702]

Ad Karvannum

The third term applied to horses lost on campaign was *redditur ad karvannum* which translates as sent to the caravan, or the baggage train. This comprised a train of carts and pack animals to carry supplies such as food for armies on the move. In 1298 forty-one horses (3 per cent of the total number appraised for the campaign) were listed as *ad karvannum*. There were several possible explanations for why horses might find themselves out of action: some might have become too intractable to stay in the ranks; others could have been injured, or they might have fallen sick and needed treatment. Sending horses to the baggage train due to poor behaviour features in the rules drawn up for the Knight Templars: if a knight had 'a restive or

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[701] George Duby, *The Legend of Bouvines: War, Religion and Culture in the Middle Ages*. trans. by Catherine Tihanyi (University of California Press, 1990), p. 200; Thomas Grey, *Scalacronica: 1272-1363,* ed. and trans. by Andy King, Surtees Society, 209 (Woodbridge: Boydell, 2005), p. 75.

[702] For the form and usage of Scottish axes see David H. Caldwell, 'Some Notes of Scottish Axes and Long-Shafted Weapons', in *Scottish Weapons and Fortifications 1100-1800*, ed. by David H, Caldwell (Edinburgh: John Donald Publishers Ltd), pp. 253-314.

jibbing horse, or one that bucks or throws him', he was allowed to send it to the train and exchange it for another.[703] The original horse might then have been redeployed as a baggage animal or sent away for further training. Edward I's destrier was said to have proved difficult to mount at the start of the Battle of Falkirk and broke two of the king's ribs, and this illustrates that no matter how well prepared a horse was for warfare, some would find the reality unsettling.[704] An inventory of the king's household in 1303 records that the £10 horse belonging to Geoffrey le Simple was sent to pull the carts of the Wardrobe, and it is possible that it too proved unsuitable for riding in the ranks.[705]

Although behavioural problems may account for a small proportion of horses sent to the baggage train, most were probably retired due to injury or disease. This is evident in notes added in the margins of one of the inventories drawn up in 1298: two horses belonging to Simon Clifford and Robert Haufstead are struck out of the roll and recorded as being sent *ad karvannum* the day after the battle at Falkirk. Sometime later, an additional note was added stating that compensation had been withdrawn as each of these horses was *restituitur sanus* or 'restored to health' at Durham and had been returned to their owners.[706] The horses had sustained injuries during the battle and were relocated back across the Scottish border where they could be safely treated by horse doctors. Evidence of such practitioners can be found in a list of expenses for an iron-grey warhorse belonging to Jacob de Molendis (a sergeant in John Drokensford's retinue) which was recorded as *ad karvannum* after being injured at Kirkcudbright in Galloway. Just over £2 was spent on the

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[703] *The Rule of the Templars: The French Text of the Rule of the Order of the Knights Templar*, pp. 57; 179.
[704] Walter of Guisborough, p. 326; *Chronicon Henrici Knighton*, ed. by Joseph Rawson Lumby, 2 vols (London: Her Majesty's Stationery Office, 1889-1895), I (1889), p. 399.
[705] TNA, E101/612/11, m. 1.
[706] Gough, p. 196.

wages of a marshal to look after the horse and a woollen blanket was purchased to keep the patient warm.[707]

The case of Clifford and Haufstead's horses is interesting as it suggests that there may have been a qualification period in which an animal could be cured, and compensation withdrawn. A comparison can be made to the statutes raised in Mantua, where the horses belonging to the municipal militia were not certified as *intutilis* (literally, 'useless'), until they had spent at least a month under the care of a marshal.[708] However, it is worth noting that out of the 41 horses listed as *ad karvannum* in the Falkirk inventories, only two were deemed fit to be returned to their owners. This suggests that most of the horses handed over to the army's marshals needed long-term treatment - Jacob de Molendis' horse remained under the care of the horse doctor for 88 days.

Injuries were as likely to have been sustained on the march as in battle or raids. One of the problems faced by the travelling of large numbers of horses together was the potential risk of injury from each other. In their natural state, wild horses live together in social units where hierarchies are mapped out and reinforced using complex rituals of behaviour. Horses warn each other not to encroach on their physical space by head threats (placing back the ears and attempts to bite), or by rearward actions, where the hindquarters are turned towards another horse in an attempt to strike out with the heels.[709] In the artificial herd environment of a campaign horses were expected to work closely together and this meant that the risk

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[707] Topham*,* p. 84. J. Davies argued that 'flasketto' was derived from the Welsh 'fflasget', meaning a wicker basket, but in this particular context this tranlsation makes little sense (J. Davies, 'On Keltic Words Used By Early English Writers', *Philological Society*, 6 (1853), 129-37 (p. 131)). The term is more likely to be a corruption of the Latin 'flasciata', a woollen blanket. See 'Flasciata', *Logeion, Latin and Greek Dictionary.*

[708] *Della economia politica del municipio di Mantova,* pp. 396-97.

[709] Susan M. Wells and Bettina von Goldschmidt-Rothschild, 'Social Behaviour and Relationships in a Herd of Camargue Horses', *Ethology*, 49 (1979), 363-80 (p. 365).

of wounding from kicks was high. This was the case in the First World War, where many cavalry horses were injured by being kicked by other horses.[710] On King John II's Almeria expedition in 1309 a third of the 12 horses listed as *affollatus* (sick or wounded) were described as suffering from injuries to the shoulder. These may have been caused by collisions or falls, but Jordanus noted that wounding to the scapula was often caused by other horses lashing out with their hooves.[711]

Disease may also have accounted for some of the horses sent to the baggage train: the chestnut rouncey ridden by the king's chief baker on the Almeria expedition succumbed to sickness and was duly handed over to the royal marshal for inspection. The horse was officially diagnosed as *affollatus de morbo de cuchas* (afflicted by a sickness of worms).[712] The *cucha*, or *verme* in Latin, was a term used by hippiatric practitioners to explain the cause of several equine diseases. Jordanus devoted a lengthy chapter to its destructive influence, describing it as an overabundance of noxious humours which congregated in the horse's glands and spread throughout the body.[713] The clinical signs of an infection included pus-filled abscesses and can be compared to farcy (also known as glanders) a disease that affected many cavalry horses during the First and Second World Wars.[714]

Although horses were withdrawn from the ranks for several different reasons the logistics of moving them out of hostile territory has not yet been the subject of historical research. Fortunately, a handful of documents titled *Rotulus de karvannis*

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[710] '*New Zealand's First World War Horses'*, Ministry for Culture and Heritage (2014), <https://nzhistory.govt.nz> [accessed 30 November 2023].

[711] Jordanus Rufus, p. 29.

[712] *Arnaldi de Villanova, Opera Medica Omnia X.2 (Regimen Castra Sequentium),* p. 110.

[713] Jordanus Rufus, p. 23-30. For a discussion on the cause of equine disease and its effects on a medieval army see Carroll Gillmor, 'The 791 Equine Epidemic and Its Impact on Charlemagne's Army', in *Journal of Medieval Military History III*, ed. by Kelly Devries and Clifford J. Rogers (Woodbridge: Boydell & Brewer, 2005), pp. 23–45.

[714] Harrison*,* 'Jordanus Rufus and the Late-Medieval Hippiatric Tradition: Animal-Care Practitioners and the Horse', p. 146*.*

(Rolls of the Baggage Train) have survived the passage of time as these offer an insight into policies put in place to accommodate wounded warhorses. A roll made in 1319 is subtitled 'expenses of the horses sent to the king's caravan after the Scottish war' and is particularly illuminating.[715] Edward II had launched a campaign into Scotland in July 1319 but a combination of political factions and the movement of Scottish troops into England meant that by 21 September the king's army had withdrawn to Newcastle.[716] It was here that one Nicholas Warre (his official position is not given but he may have been a clerk or horse doctor annexed to the royal household) was placed in charge of 31 horses that had been officially listed as *redditur ad karvannum*.[717] These horses had travelled with the king's train up to this point but were then separated into a smaller sub-train for the second stage of the journey to York. This was a common destination for horses that had been wounded on Scottish campaigns: a roll made in 1299 recorded that 50 incapacitated horses were taken there for treatment.[718]

It is important to note that these sub-trains consisted of only the 'walking wounded' and those thought capable of travelling a considerable distance - around 145 km - to safety. Horses that were too lame to walk far may have been left in various garrisons along the way, but those that were too injured to be moved were probably euthanised. This made practical sense as simply abandoning a crippled

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[715] TNA, E101/99/35. The title at the top of the membrane is 'Compotus Nicholai Warre de expensis equorum redditorum ad carvannum regis post guerram Scotae' (Account of Nicholas Warre of the expenses of the horses sent to the king's caravan after the war in Scotland).

[716] Phillips, *Edward II*, pp. 342-50

[717] TNA, E101/99/35.

[718] TNA, E101/7/21. These horses comprise a mixture of sumpters, rounceys and 'equi'. Three rounceys were admitted to the caravan by Henry Nasard, the king's sergeant and on the dorse of the membrane are three appreciated 'equi' valued between five and ten pounds.

horse allowed the enemy to acquire a valuable animal, one that given time could perhaps be cured.

The horses that were gathered at Newcastle under Warre's supervision set off for York on 25 September, a journey of around 144 km that was to take 22 days. They travelled independently of the main army which decamped some three days later. This head start reflected the slow pace of the injured animals which could only travel around 6.5 km each day. In comparison, the healthy horses accompanying the main army were able to travel the distance from Newcastle to York in seven days, covering around 20 km a day - three times the speed of the sub-train.[719] Warre's string of horses was accompanied by Michael le Caravannus, two grooms, and two pack horses used to carry supplies and the various medicines that had been purchased to treat the sick horses' injuries. Leather halters were purchased to lead the wounded animals, and each horse received hay, a peck of oats and half a peck of bran daily – half the rations usually given to warhorses but perhaps reflective of their reduced workload. Despite the slow pace many horses did not survive the trip. In total, 11 were recorded as having died along the route, meaning that when York was eventually reached on 17 October just over one third of the horses that had started the journey had succumbed to their injuries. Of those that survived, 1 was given to Walter le Caravannus to use as a packhorse, 10 were placed under the care of one Walter Ferrator (perhaps for further veterinary treatment or to be sold), and the remainder were handed over to the king, presumably to be absorbed into the royal household where they could be used as spare mounts.

The account of Nicolas Warre shows that despite medical intervention horses sometimes died of their wounds or perished under the strain of having to be moved

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[719] For the king's itinerary see Phillips, *Edward II*, pp. 342-50.

out of hostile territory. In such cases the corresponding inventories were updated: the warhorses belonging to Sir Walter Cornhull and Sir Robert de Toni were listed as *ad karvannum* in the 1282 and 1298 inventories, but when these horses subsequently died these annotations were struck out and overwritten with *mortuus*.[720] Later campaigns proved equally hard on horses: an inventory raised for a fourth Scottish campaign in 1301 reveals that out of around 500 horses listed in the king's suite, fully one-third ended up being the subject of compensation claims, with 62 of these being sent to the baggage train.[721] There were no major battles in this campaign so many of the horses that were recorded as lost appeared to have suffered the effects of the march - most of the losses occurred during the winter months when difficult conditions and inclement weather appeared to have taken a heavy toll on horses. A fifth campaign in 1303-1304 saw little improvement in the number of horses recorded as out of action: this time 513 horses are listed in the king's household and 284 are struck out as lost. Of these, almost half are described as *mortuus*, or having died, 78 were sent to the baggage train, and 81 are recorded as *ad elemosinam*.[722]

Ad Elemosinam

The inventories of 1298 record 48 horses as *redditur ad elemosinam* but this term is somewhat ambiguous in its meaning. Andrew Ayton admitted that the phrase was 'particularly problematic' and suggested that it might indicate that a horse was put forward as alms after a person's death.[723] However, Master Peter the king's surgeon

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[720] TNA, C47/2/7, m. 1; Gough, p. 164
[721] TNA, E101/9/24.
[722] TNA, E101/612/11.
[723] Ayton, p. 85.

had his horse registered as *ad elemosinam* at Carlisle in 1298 but appears two years later in receipt of robes so there must be an alternative explanation.[724] A clue might lie in the fate of John de Gillingham's rouncey which in one inventory is recorded as sent *ad carvannum et postea redditi elemosinis,* (to the baggage train and afterwards recorded as *ad elemosinam*) and John de Calentyn, a sergeant in Sir Thomas Chaucombe's retinue at Falkirk, also had a horse similarly described.[725] These horses may have been handed over to the marshals in the baggage train in the hope they could be restored to health but they subsequently proved to be irrevocably broken down. The horses were then perhaps either sold off or given away as alms. Donating horses for pious reasons was not unusual: in 1295 Edward I gifted one of his destriers and two broodmares to the Hospital of Saint John the Baptist in Oxford.[726]

Another reason warhorses may have been recorded as *ad elemosinam* was their inability to continue due to exhaustion. This condition was recognised elsewhere as one of the valid reasons for horse restoration: in France, horses qualified if they were 'maimed, afflicted, exhausted, or suffering from disease'.[727] Exhaustion was likely to have been one of the reasons why almost half of the 38 horses that are listed as withdrawn from service in Carlisle in late September 1298 were recorded as *ad elemosinam*.[728] This location was one of the final stops for the army on a campaign that had started two months earlier in Roxburgh, and by the

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[724] Gough*,* p. 175; Topham*,* p. 323.
[725] Byerly, II (1986), p. 110. 'Liberati ad carvnannum et postea redditi elemosinis'; Gough*,* p. 234.
[726] TNA, E101/97/27 m.1.
[727] Contamine, *Guerre, état et société à la fin de la Moyen Âge*, p. 104. 'Mehaignés, navrés, recrus, affollé'. The latter term is found as 'affollatus' in Catalan inventories where it applied to horses that were either wounded or suffering from disease, see *Arnaldi de Villanova, Opera Medica Omnia X.2 (Regimen Castra Sequentium),* p. 177.
[728] Gough*,* pp. 164-235.

time Carlisle had been reached the horses had fought in a major battle and covered some 250 miles (402 km) of Scottish terrain. It is tempting to consider whether the weight of the horses' barding contributed to their overall exhaustion, but it is likely that they were only fully covered for battle or armed raids. Even so, the distance travelled, and the weight of their armed riders appeared to push many horses' resilience to the limit.

Exhausted horses could not continue to be ridden and were unfit for further action. In some cases this caused operations to be postponed: in 1340 the reason given for not pursuing the 200 Scottish soldiers that had attempted to seize Roxburgh castle was apparently due to the garrison's horses being declared 'too weary'.[729] A short period of rest might have helped these horses recover, but knights and their sergeants traveling with the king's army would not have had the luxury of taking time off to let their horses recuperate, partly because pay was dependent on having a serviceable mount. Instead, they handed their exhausted mounts over to royal officials, claimed compensation, and replaced them with fresh horses as quickly as possible. Their retired horses were either sent back to England to recover before being sold or were drafted as baggage or haulage animals – in the roll of horses valued for the 1303 Scottish campaign John de Flete had two horses recorded as *ad elmosinam* but a note was added to the second horse stating that it was later handed over to the carts of the Wardrobe.[730]

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[729] *Calendar of Documents Relating to Scotland: Volume V (Supplementary),* p. 269.
[730] TNA, E101/612/11, m. 4.

<u>Perditus</u>

A final note must be made about *perditus*, a term that does not appear in the inventories raised in 1298 but can be frequently found in later inventories.[731] Taken literally *perditus* meant 'lost', and appears to have been used when the fate of a horse was uncertain, for example if had gone missing in action.[732] Sometimes this was due to having fallen into enemy hands when their riders were captured: in 1301 Basculus the crossbowman received £12 for a horse described as *perditus* when he was taken prisoner by Scottish forces, and Martin Garsie also 'lost' his horse when he met the same fate at Melrose on 29 October.[733] Restoration for horses that had fallen into the hands of the enemy was not unknown – *perduto* was one of the criteria for compensation of mercenary horses in Italy.[734]

Many of the horses recorded as *perditus* in English inventories were lost during skirmishes or on special missions. Two horses belonging to Henry and John Tonk were listed as *perditus* during an encounter with the Scots at Erth on 28 September 1301, and in September 1307 seven out of 22 men-at-arms under the command of John Botetourte lost their horses whilst on a mission to capture Robert Bruce.[735] Whether these horses were killed, seized by the enemy, or had bolted when their riders fell off, is unclear. Some were expensive warhorses: Walter de Boreward lost a destrier worth £33 in a raid against Robert Bruce in March 1307, and a few weeks later, whilst pursuing Bruce between Glentruyl (Glentrool) and

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[731] Occasionally 'amissus' was used in place of 'perditus': whilst defending Edinburg castle a rouncey belonging to Walter Hakelute the king's valet was recorded as 'amisit in servicio regis', see Topham*, p. 178.

[732] For example, over a dozen debentures (debts acknowledged by the Wardrobe) for horses lost at the Battle of Bannockburn in 1314 record all horses as 'perdito in servicis regis', presumably because the defeat meant that it was impossible to know the exact fate of the animals (TNA, E404/482/31).

[733] TNA, E101/9/24, m. 1.

[734] *Documenti per servivite alla atoria della milizia Italiana,* p. 544.

[735] TNA, E101/9/24, m. 3; E101/612/21. Erth is probably Airth near Falkirk.

Glenheur, John de St John lost another valued at £26.[736] Mounted raids demanded hard riding across country and the decision to take destriers - horses especially designed and trained for combat - suggests that sometimes heavy fighting was anticipated. This may have been the reason Aymer de Valence chose to ride a destrier to pursue James Douglas in the forest of Passelewe (Paisley in Renfrewshire), on 14 September 1307.[737] Unfortunately, Valence's destrier was recorded as *perditus* during this mission and shortly afterwards, William de Cleydon lost his destrier in similar circumstances, this time whilst pursing Robert Boyt near Rutherglen.[738]

The expectation of close fighting might also account for the large number of destriers that appear in Robert Clifford's retinue in November 1311. This was an exceptionally well-turned-out force comprising 56 men including 15 knights mounted on destriers. Twenty-two of these horses, 11 of which were destriers, were selected for what must have been a special operation carried out near Faringley on the Scottish border. Half the horses are recorded as *perditus,* and almost all were destriers.[739] Perhaps heavy fighting ensued and as specialist combat horses the destriers were in the thick of the action, but it is also possible that some broke down under the strain of what may have been a prolonged and arduous mission. Andrew Ayton pointed out that during Edward III's Scottish campaigns Edward III destriers were replaced by coursers, a type more suited to rough country due to their

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[736] *Calendar of Documents Relating to Scotland: Volume V (Supplementary)*, pp. 207-08. Glenheur may be today's Glenmuir which is located approximately 70 miles from Glentrool.
[737] Passellewe is a variant of Paisley, the forest of which appears in contemporary charters (for example, TNA, C47/23/3, m. 31). The abbey at Paisley was burned by English forces in the same year that Valence was patrolling the area: 'University of Portsmouth, *Descriptive Gazetteer Entry for Paisley,* A Vision of Britain Through Time (2023), <https://www.visionofbritain.org.uk> [accessed 2 December 2023].
[738] *Calendar of Documents Relating to Scotland: Volume V (Supplementary),* p. 248.
[739] TNA, E101/14/15, m. 3. Compensation for these horses is recorded in Bain, III (1887), p. 278.

connection with hunting.[740] Coursers will have had a different conformation from the destrier – they may have been stockier with thicker leg bones which would have made them less athletic than destriers but given them the stamina and strength to cope with hard riding. The heavy losses of destriers in Clifford's retinue may well illustrate that these horses were better suited to short periods of combat, not for rapid pursuits over difficult terrain.

Conclusion

This chapter investigated how horses were managed on campaign and explored how they were affected by warfare. The process of appraising warhorses involved the coordination of teams of officials and scribes whose role was to assess each horse's type and state of health before recording its details and sending it for branding. Every horse needed daily fodder and regular shoeing on the march and provisions were made to maintain supplies of oats, hay, and prefabricated shoes. Sometimes supply networks were interrupted, and this had an adverse effect on the animals' health. Some perished from lack of fodder, and in extreme cases when food for men had run out, there was little option but to make horses the products of consumption.

Although the warhorses under Edward I and Edward II were inevitably casualties of warfare their general health and welfare were considered important. Great care was taken to protect them from injury from weapons. The requirement for men-at-arms to have their horses barded may have been partly prompted by the desire to reduce compensation claims, but it also points to concerns about the vulnerability of horses in combat. Barding did not make a horse immune to the effects of weapons, but it helped to reduce the chances of serious injury or death.

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[740] Ayton, p. 22.

The choice of barding depended on individual preference and financial constraints, and the amount of barding was limited by its thermal properties and the amount of weight a horse could bear. The care of warhorses is also evident in the attempts made to look after those that were injured, sick, or exhausted from the rigours of the campaign. These horses were not abandoned but instead were withdrawn from active service and sent to be treated by the horse doctors who travelled with the royal caravan. Policies were put in place to move them in small groups out of hostile territory to the safety of nearby towns such as York. They were given medical treatment along the way, and those that survived the journey were placed under the care of marshals in attempts to retore them to health.

Conclusion

The importance of warhorses in England under Edward I and Edward II is made evident by the efforts that were made to source and produce warhorses. The impact warhorses made on medieval society cannot be understated: the creation of horse-trading companies, the extensive network of royal studs, and the complex administrative structures that were put into place to manage them on campaign is a testament to their important role in a period of almost continuous warfare.

These warhorses consisted of a conglomerate mixture of horse types. Although destriers are traditionally viewed as the typical mounts of men of knightly status, in reality, they were a rare sight on the battlefield. They were certainly considered as the ultimate combat horse and played an active role in both warfare and tournaments, but their high cost meant that they were the preserve of only the very wealthiest members of the aristocracy. The most common type of horses ridden by knights were simply termed *equi*, or horses, and comprised a mixture of horse types that did not hold the elevated status of destriers but were nonetheless of good quality. The numerically dominant warhorses in English armies were rounceys, and these appear in large numbers due to their association with the lower-status men-at-arms who served on campaign. Therefore, when we imagine warhorses in medieval battles it is more accurate to view them as an eclectic mix of horseflesh comprising mainly rounceys, a smaller number of *equi* and only a few destriers.

The colours of warhorses did not reflect the pale and light-coloured mounts that frequently appear in contemporary literary and visual works. Instead, most warhorses were bay or black, and pied colouring was also common, the latter being particularly favoured by Edward I. However, it is perhaps in the minutiae of details do

we properly get a sense of the physical reality of warhorses. Those that are described in the inventories as missing an eye or ears, or bearing the scars from former wounds, bring home the fact that these horses lived lives that were shaped by human conflicts.

The mass importing of warhorses on the eve of Edward I's first campaign in 1277 highlights the fact that up to that point, little concern had been paid to warhorses as a major campaign had not been fought in England since the Norman Conquest. If high-ranking members of the aristocracy needed horses for combat, either for tourneying or for the first Welsh war, these horses could easily be purchased via foreign merchants who were able to tap into the international horse-trading networks, the nexus of which lay in France. However, over-reliance on these markets led to fundamental shifts in both French and English policies. A second attempt to import large numbers of warhorses from France into England in 1282 caused the French crown to ban warhorse exports to put political pressure on Edward I and to protect their own supplies. The ban led to a watershed moment in the history of the warhorse in England: faced with severely limited access to the international markets, the only way Edward I could guarantee supplies was to embark on an ambitious programme of breeding.

The importance of creating a sustainable supply of warhorses for the Crown is reflected in the creation of an extensive network of studs. This was a serious affair: expenses were rigorously accounted for, and production was closely monitored. The studs operated under a strict set of rules designed to produce the best warhorses through selective breeding. Every opportunity to increase numbers was taken: stud horses were frequently gained through escheats, death duties, and forfeitures. The constant addition to stud numbers demonstrates that warhorse supply was a priority,

especially during a time in which an almost constant series of conflicts generated a continuous need for replacement horses. Edward II was a keen horse breeder and attempted to increase production and improve his stock by importing foreign horses, but his efforts were thwarted by the epizootic that devastated herds of cattle following the Great Famine. This also had a devastating impact on horses, but the royal studs were able to quickly recover due to Edward II's seizure of baronial studs.

The importance of owning warhorses that had been properly prepared for warfare is evidenced in the time and effort put into their training. This took place over several years, and the methods used to break in these horses were similar to both hippiatric methodologies and modern practice. This continuity of practice reflects that the basic requirements of horses remain unchanged: they needed to be able to safely carry a rider on their backs and obey instructions. But warhorses also required additional specialist training for combat, and this training made them stand out from the thousands of ordinary horses used for everyday riding and haulage in medieval England.

The importance of warhorses in military society is evidenced by the policies put in place to ensure men-at-arms kept warhorses at the ready, and the large-scale institution of *restaurum equorum*. The latter generated a complex administrative network designed to bring together men of high military standing and royal clerks to value horses and record their losses. The burden placed on the Crown by the administrative and financial demands of *restaurum equorum* was compounded by the difficulties of maintaining large numbers of horses in the field. Regular shoeing and sufficient supplies of fodder were needed to keep horses going on the march, and although great efforts were made – orders for shoes and oats, and the employment of men to cut grass were key features in army logistics – the lack of

supplies was often felt. Horses sometimes went short of fodder, and in extreme cases when troops were also facing starvation, the horses themselves became the product of consumption. The compounded effects of shortages and the rigours of the march resulted in the loss of many horses, and others had to be withdrawn from active service due to injury or exhaustion. These horses were not simply abandoned: efforts were made by horse doctors to treat their wounds and policies were put in place to relocate them to safe spaces where they could be cared for. This demonstrates that although warhorses were essentially commodities of warfare, they were cared for even when they had been rendered useless.

Aside from the march, horses were also vulnerable to injury and death in battle or on raids and in skirmishes. The requirement for men-at-arms to bring covered horses to war speaks to concerns over the horses' safety, although this probably reflected attempts to mitigate compensation claims as much as attitudes towards animal welfare. Although warhorses were equipped with armour made of leather, mail, and sometimes pieces of plate, it was not possible to provide them with complete protection as the weight and thermal effects of armour limited the amount that horses could feasibly bear. The loss of over 100 appraised horses in the royal retinues at the Battle of Falkirk in 1298 illustrates the impossibility of making warhorses immune from the effects of weapons and also shows that in battle horses were as much the targets of violence as the men who rode them. This applied to skirmishes as well as battles: the attrition rates of horses taken on raids suggest that these operations were also costly in terms of horseflesh.

This study provides a unique insight into a period in which the production of warhorses was at an apex, for under Edward III changes in military tactics meant that despite the great efforts to produce horses suitable for heavy cavalry in the

previous two reigns, the role of warhorses later became limited to *chevauchée*-type operations. This thesis contributes to our understanding of the importance of warhorses in medieval society under Edward I and Edward II by providing the first comprehensive study of how they were obtained, bred, and trained, and of how horses were impacted by medieval warfare. This will be of benefit to researchers of animal studies and military history, and it will serve as a format for future research on warhorses in earlier and later reigns.

Appendices

Appendix 1: Horse Colours

Main Colour	Variants	Description
albus		white
	albus piole	mostly white but some flecking of a different colour
	albus pomele	mostly white with some dapples (rounded spots of colour usually of a different shade)
Badius		bay: a reddish-brown coat with black points (mane, tail, legs)
	clarus badius	bright bay
	nigrus badius	dark bay
	badius pomele	bay with dapples
	brunus badius	brown bay
	sorum badium	sorrel bay
Baucanus		pied: a coloured base coat overlaid with irregular patches of white. Used alone to mean skewbald
	doyn bausan	dun pied
	favus bausan	tawny pied
	badius bausan	bay pied
	badius clarus bausan	bright bay pied
	sorus bausan	sorrel pied
	nigrus bausan	black pied: piebald
	vairus bausan	varied pied: tricoloured
Doyn		dun: a diluted brown or grey base colour with black points and typically a dorsal stripe
	favus doyn	tawny dun
	doyn nigrus	dark dun

Main Colour	Variants	Description
Favum		tawny: light yellowish brown
	favus pomele	tawny with dapples
Grisus		grey
	grisus pomele	grey with dapples
	Ferrandus	steel grey
	ferrandus pomele	steel grey with dapples
	ferrandus albus	steel grey with white hairs throughout
Liardus		roan: an even mixture of coloured and white hairs
	Liardus	roan with white flecks
	liardus pomele	roan with dapples
	rough/rubeus liardus	red roan
	varius liardus	variegated roan
	sorus liardus	sorrel roan
	nigrus liardus	blue roan
	nigrus liardus pomele	blue roan with dapples
	badius liardus	bay roan
	albus liardus	white roan
	doyn liardus	dun roan
	grisus liardus	grey roan
Niger		black
Morellus		brown-black
Piole		flea-bitten: white with coloured flecks or freckles throughout
Pomele		dapple grey: a mixture of black, grey, and white hairs with dapples
Powis		liver chestnut: dark reddish-brown
	powis pomele	liver chestnut with dapples
	powis liardus	liver chestnut with some roaning

Main Colour	Variants	Description
Sorus		bright chestnut (sorrel)
	sorus pomele	sorrel with dapples
Varius		a mixture of several different colours
	varius nigrus	variegated but mostly black
	varius pomele	variegated with dapples

Appendix 2: Horse Imports and Purchases 1276-1321

Date	Source	Description	Purchaser	Agent	No. horses	Value	Port or Origin
1276	*CPR* 1272-1281, p. 132	Horse	King	Hugh Piscis	1	£10 13s 4d	Gascony
1276	*CPR* 1272-1281, p. 159	Horses & other beasts	King	William son of Glaye	unknown	unknown	Stirling fair
1276	*CPR* 1272-1281, p. 169	Horses	King	Nutus Fauberti	20	unknown	Wissant
1276	*CPR* 1272-1281, p. 184	Destriers	Otto de Grandison		2	unknown	Wissant
1276	*CPR* 1272-1281, pp. 171; 184	Horses of value & destriers for Welsh war	William Beauchamp, Roger Mortimer etc	Donelin of Florence	12	unknown	Wissant
1276	*CPR* 1272-1281, p. 184	Request to bailiffs to allow shipping of horses	King	Elias de Hauvill	5	unknown	Wissant
1276	*CPR* 1272-1281, p. 184	Request to bailiffs to allow shipping of horses	King	Nutus Fauberti	10	unknown	Wissant
1276	*CPR* 1272-1281, p. 184	Request to bailiffs to allow shipping of horses	King	Matthew Columbaris	20	unknown	Wissant
1276	*CPR* 1272-1281, p. 184	Request to bailiffs to allow shipping of horses	King & Henry de Lacy	Galvanus of Ferrara	40	unknown	Wissant
1276	*CPR* 1272-1281, p. 171	Horses	Henry de Lacy	Beneventus of Bologna & John le Graunt	30	unknown	Overseas

Date	Source	Description	Purchaser	Agent	No. horses	Value	Port or Origin
1277	*CPR* 1272-1281, p. 191	Great horses of value for the Welsh war	King	Donelin of Florence	18	unknown	France
1277	*CPR* 1272-1281, p. 194	Horses	William de Valence	unknown	25	unknown	Wissant
1277	*CPR* 1272-1281, p. 194	Horses	King	Matthew Columbaris	20	unknown	Wissant
1277	*CPR* 1272-1281, p. 212	Horses	King	Matthew Columbaris	40	unknown	Wissant
1282	*CPR* 1281-1292, p. 11	Horses	King	John de Vescy & Antony Bek	unknown	£1000	Aragon; Navarre
1282	*CPR* 1281-1292, pp. 14; 18	Great horses	King	Nutus & Burgensis Fauberti	80	unknown	Overseas
1286	Byerly, II, p. 29	Horses & 1 destrier	King	Roger of Mauléon	4	£112	Aragon; Navarre
1299	*CPR* 1281-1292, p. 417	Warhorses	King		3	unknown	Bayonne
1301	*CPR* 1292-1301, p. 588	Warhorses	King	Velluti of Florence	2	unknown	Brabant
1307	*CPR* 1307-1313, p. 265	Wine and horses	King	Paschasius de Villa	unknown	£259 8s 6d	Bayonne
1307	Trokelow, p. xxv-xxvii	Destriers & great horses for tournament at Warwick & Scots war	King	Betino & Kymerico Frescobaldi	19	£489 2s 8d	unknown
1307	C47/3/52, m. 13	Palfreys	Prince Edward	unknown	9	unknown	Ripon fair
1309	*CPR* 1307-1313, p. 100	20 warhorses & 12 mares	King	Bynde & Philip Bonaventure	32	unknown	Lombardy
1310	*CPR* 1307-1313, p. 204	Horses	King	William Toulouse	unknown	unknown	Spain
1310	*CPR* 1307-1313, p. 266	Warhorses	King	Albertinus of Bologna	unknown	unknown	Overseas
1310	*Gascon Rolls* 1307-1313, p. 137	Spanish horses	King	Dominique Roncevaux	2	£33	Spain
1310	*CPR* 1307-1313, p. 290	Horses	King	William Toulouse	unknown		Navarre

Date	Source	Description	Purchaser	Agent	No. horses	Value	Port or Origin
1312	*CPR* 1307-1313, p. 433	Horses	King	Bertrand Caillau	unknown	£333 6s 8d	unknown
1312	*CPR* 1307-1313, p. 437	Horses	King	William Toulouse	unknown		Spain
1313	*CPR* 1307-1313, p. 589	Horses	King	William Toulouse	22	£602 6s 8d	Spain
1314	*CPR* 1313-1317, p. 102	Warhorses	King	William Toulouse	unknown	unknown	Spain
1314	*CPR* 1313-1317, p. 164	Horses	King	Merlin de Sene	unknown	unknown	Overseas
1315	*CPR* 1313-1317, p. 265	Horses	King	Blasius Aldebrandini	unknown	unknown	Overseas
1315	E101/99/20, m. 1	Horses & 1 destrier	King	William & Pons Toulouse	16	£521	unknown
1315	*CPR* 1313-1317, p. 284	Horses	Bartholomew Badlesmere	Robert de Ardene & John de Leyne	unknown	unknown	Overseas
1315	CPR 1313-1317, p. 302	Horses	King	Peter de Cabanus	12	£376	London
1317	CPR 1313-1317, p. 670	Horses	King	Thomas le Botiller	unknown	unknown	Overseas
1317	CPR 1317-1321, p. 60	Horses & armour	King	Walter Matthieu of Caen	unknown	unknown	France; Gascony; Navarre; Spain
1319	CPR 1317-1321, p. 408	Horses	King	Blasius Aldebrandini	unknown	unknown	Overseas
1319	*CCR* 1318-1323, p. 123	Destriers & other horses	King	Hugh Despenser	unknown	unknown	Spain
1321	CPR 1317-1321, p. 580	Horses	King	Roger de Clisseby & Bancus de Leer	unknown	unknown	France; Flanders

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